GE Interlogix
CASI

Picture Perfect™ 2.0 Administration Guide

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Contents

1. Using This Manual 1.1
- Purpose 1.1
- Who Should Read this Manual 1.1
- Terminology 1.1
  - Click 1.1
  - Select 1.1
  - Press 1.2
  - Command 1.2
  - Toggle 1.2
- Notational and Typographical Conventions 1.3
- Related Documentation 1.4

2. System Overview 2.1
- Introduction 2.1
- Operating Features 2.2
- Optional Features 2.4
- Support Services 2.5
- What's New 2.5

3. Getting Started 3.1
- Overview 3.1
- System Startup 3.1
- Log In 3.1
- Log Out 3.3
- Using the Common Desktop Environment 3.3
- Main Menu and Submenus 3.4
- Forms 3.6
  - Text Boxes 3.6
  - Toggle Buttons 3.7
  - Radio Buttons 3.7
  - Selection Buttons and Picklists 3.7
- Using Function Buttons 3.9
- Adding or Changing Data 3.14
- Using a Mouse 3.14
- Using a Window 3.15
  - The Title Bar 3.15
  - The Window Frame 3.16
  - The Scroll Bars 3.17
- Using the Window Menu 3.18
- Using the Workspace Menu 3.19
- Using the Programs Menu 3.19
- Using the Clients Menu 3.20

Stopping Picture Perfect.....3.21
Starting Picture Perfect.....3.21
Verify that Picture Perfect is Stopped or Running 3.22
Shutting Down the Entire System 3.24
Frequently Used Unix Commands.....3.25
System Setup Procedures.....3.26

4. Initial Setup..... 4.1
Overview.....4.1
Prerequisites 4.1
What You Will Be Doing.....4.1
Terminals.....4.2
Setup 4.2
The Terminals Form 4.2
Modems.....4.4
Setup 4.5
The Modems Form.....4.5
Ports 4.10
Setup.....4.11
The Ports Form 4.11
The Network Micro Ports Form.....4.16
Setup 4.16
The Network Ports Form 4.16
Printers 4.18
Setup 4.18
The Printers Form 4.18
Email 4.19
Setup 4.19
The Email Form.....4.20
Routings 4.21
Setup 4.21
The Routings Form 4.21
Badge Formats.....4.24
Setup 4.25
The Badge Formats Form.....4.26
Parameters.....4.27
Setup 4.27
The Parameters Form 4.27
Departments 4.37
Setup 4.37
The Departments Form 4.37
Personnel Type.....4.39
Setup 4.39
The Personnel Type Form.....4.39

5. Facilities and Facility Profiles 5.1

Overview 5.1
What You Will Be Doing 5.2
Facilities 5.2
The Facility Form 5.3
How to Add or Delete a Facility 5.3
Facility Profiles 5.5
The Facility Profiles Form 5.6
How to Add a Facility Profile 5.9
Facility Set Manager 5.11
How to Change the Active Facility 5.11
Linking Facilities, Facility Profiles, Permissions, and Operators 5.12
How to Link Facilities, Facility Profiles, Permissions, and Operators 5.13

6. Permissions and Operators 6.1

Overview 6.1
What You Will Be Doing 6.1
Permission Groups 6.1
Setup 6.2
The Permission Group Form 6.3
Permissions 6.4
Setup 6.4
The Permissions Form 6.5
Operators 6.9
Setup 6.9
The Operators Form 6.9

7. Alarm/Activity Monitor Routing 7.1

Overview 7.1
Prerequisites 7.1
What You Will Be Doing 7.2
Route Definitions 7.3
Setup 7.3
The Route Definitions Form 7.3
Route Points 7.4
Setup 7.4
The Route Points Form 7.5
Route Point Rules and Restrictions 7.8
Other Applications 7.9

8. Alarm Activity Messages and Alarms 8.1

Overview 8.1
Prerequisites 8.1
What You Will Be Doing.....8.2
Alarm Instructions 8.2
Setup 8.2
The Messages Form 8.3
Alarm Responses.....8.4
Setup 8.4
The Responses Form.....8.4
Alarms 8.5
Setup 8.5
The Alarms Form 8.6
Alarm Color, Processing State.....8.11
Setup.....8.11
The Alarm Color Form 8.12

9. Input and Output Groups 9.1

Overview 9.1
Prerequisites 9.1
What You Will Be Doing.....9.1
Output Groups 9.1
Setup 9.2
The Outgroups Form 9.2
Input Groups 9.3
Setup 9.4
The Input Groups Form 9.4

10. Micros..... 10.1

Overview 10.1
Prerequisites 10.1
What You Will Be Doing.....10.2
Configuring Micro Communications.....10.3
Ports 10.3
Direct Communications Micro.....10.3
Dial-up Micros.....10.5
Network Micros 10.7
Associating Micro Alarms and Output Groups with Input Groups.....10.10
Creating Micro Alarms.....10.10
Create Input Groups for Micro Error Conditions.....10.10
Associate Outputs with Micro Error Condition Input Groups 10.11
Adding or Change a Micro 10.11

Adding Micros 10.11
Changing Micros 10.14
The Micros Form 10.18
Dynamic Configuration 10.26
Data Encryption 10.27
Setup 10.27
The Keys Form 10.28

11. Flashing Micros 11.1
Overview 11.1
Prerequisites 11.2
What You Will Be Doing 11.2
Flash Download Utility 11.2
Features 11.2
Limitations 11.2
Operation 11.3
MicTool 11.6
Features 11.6
Limitations 11.6
Operation 11.6
eFlash 11.8
Features 11.8
Limitations 11.8
Operation 11.8
The eFlash Configuration File 11.13
Network Micro Parameter Block Configuration .. 11.15
Menu Options 11.15
Parameters 11.16

12. Inputs and Outputs 12.1
Overview 12.1
Prerequisites 12.1
What You Will Be Doing 12.1
Outputs 12.2
Setup 12.2
The Outputs Form 12.3
Inputs 12.9
Setup 12.9
The Inputs Form 12.9

13. Categories, Areas, Readers, and Doors 13.1
Overview 13.1
Prerequisites 13.1
What You Will Be Doing 13.1
How Categories and Areas Work 13.2
Identify Areas 13.3
Identify Categories 13.4
Assigning Categories to Badges, Areas, and Area Events 13.5
Categories 13.6
Setup 13.6
The Categories Form 13.7
Managing Category Assignment 13.8
Areas 13.13
Setup 13.13
The Areas Form 13.14
Readers 13.21
Setup 13.22
The Readers Form 13.22
Doors 13.30
Setup 13.31
The Doors Form 13.35

14. Badges 14.1
Overview 14.1
Prerequisites 14.1
What You Will Be Doing 14.1
Issuing a Permanent Badge – Four Methods 14.2
Console-Reader Method 14.2
Manual Method 14.2
Auto-Generate Method 14.3
Seed Counter Method 14.4
Issuing a Temporary Badge 14.4
Changing a Badge 14.5
Changing a Badge Status to Deleted 14.6
Removing Badge Records 14.7
Badge Removal Command Line Tool 14.9
Requirements 14.9
Options 14.9
The Badges Form 14.10

15. Generator..... 15.1
Overview 15.1
What You Will Be Doing..... 15.1
Creating Master Records..... 15.2
The Generator Form..... 15.3
Generating Records..... 15.7

16. Schedules and Modes..... 16.1
Overview 16.1
Prerequisites..... 16.2
What You Will Be Doing..... 16.2
Creating Modes 16.2
Normal Mode..... 16.2
Emergency Modes..... 16.3
Holiday Modes 16.4
Setup..... 16.5
The Mode Creation Form..... 16.5
Changing Modes 16.7
How to Change Mode by Command 16.7
The Mode Command Form 16.7
How to Change Mode by Schedule..... 16.8
The Mode Events Form 16.9
Scheduling Events..... 16.11
Runtime Events 16.11
Start/End Events..... 16.12
Area Events 16.14
Setup..... 16.14
The Area Events Form..... 16.16
Reader Events 16.25
Setup..... 16.25
The Reader Events Form..... 16.26
Door Events..... 16.30
Setup..... 16.30
The Door Events Form 16.31
Alarm Events 16.33
Setup..... 16.33
The Alarm Events Form 16.34
InGroup Events 16.37
Setup..... 16.37
The InGroups Events Form..... 16.38
Output Groups Events 16.41
Setup..... 16.41
The OutGroups Events Form 16.42
Reporting..... 16.44
catsup 16.44

17. Access/Secure Operations..... 17.1
Overview 17.1
Prerequisites 17.2
What You Will Be Doing.....17.2
Access / Secure Operations.....17.2
Setup 17.2
Sample Access / Secure Window.....17.5

18. Backup and Restore 18.1
Overview 18.1
What You Will Be Doing.....18.1
Backup Options 18.1
Performing an Archive.....18.2
Performing Backups 18.5
Using the Picture Perfect Backup Function.....18.5
Using the Command Line Backup Option cba 18.7
Scheduling Backups.....18.8
Restoring the Database.....18.10
Using the Picture Perfect Restore Function.....18.10
Using the Command Line Option cbr.....18.11
Recovering the Entire System 18.13

19. History Reports 19.1
Overview 19.1
What You Will Be Doing.....19.1
Controlling Which Activities Go to History 19.1
The History Form.....19.2
The Report Menu 19.2
The Type Menu 19.5
The Source Menu 19.5
The Format Menu.....19.6
The Execution Menu.....19.13
The Font Menu 19.13
The Home Icon Button 19.13
Up / Down Buttons.....19.13
Viewing a History Report.....19.14
Printing a History Report 19.16
Saving a History Report.....19.16
Scheduling a History Report 19.16
Setup 19.17
The Report Events Form 19.17

20. SQL Reports 20.1
Overview 20.1
Prerequisites 20.1
What You Will Be Doing 20.1
Structured Query Language 20.1
The SQL Form 20.2
The Reports Menu 20.4
The SQL Syntax Menu 20.8
Using a Pre-loaded Report 20.9
Creating a Badge Report 20.10
SQL Clauses 20.14
Logical Operators 20.16
Relational Operators 20.17
SQL Variables 20.18
Break Variables 20.19
LINEBREAK 20.19
PAGEBREAK 20.20
Using Pagebreak <column number> within SQL to the X-Window 20.20
Using Pagebreak <column number> within SQL to the printer 20.21
Badge Table Values 20.21
Flags Column Values 20.21
Scheduling an SQL Report 20.23
Setup 20.23
The History Report Form 20.25

21. Two Man Rule and Modified Two Man Rule 21.1
Overview 21.1
Prerequisites 21.1
Occupancy Control 21.2
How to set up Occupancy Control 21.2
Two Man Rule (2MR) 21.4
Modified Two Man Rule (M2MR) 21.4
M2MR Category Type 21.4
Modified Two Man Rule without Door Control 21.5
Modified Two Man Rule with Door Control 21.5
How to Set Up a Two Man Rule (2MR) Controlled Space 21.6
How to Set Up a Modified Two Man Rule (M2MR) Controlled Space with Door Control 21.7
How to Set Up a Modified Two Man Rule (M2MR) Controlled Space without Door Control 21.10

22. Elevator Control 22.1
Overview 22.1
System Configuration Standards 22.1
Elevator Access 22.2
Duration Time for Elevator Access 22.6
Elevator Access for All Categories 22.6
Free Access Floors 22.6
Elevator Control Setup 22.7
Defining the Number of Floors 22.8
Defining Micros 22.8
Defining Readers 22.9
Defining Outputs 22.9
Defining Inputs 22.11
The Elevators Form 22.13
The Category Floors Form 22.20
Scheduling Elevator Free Access 22.21
Floor Tracking 22.22

23. Keypad Alarm Response 23.1
Overview 23.1
Keypad Alarm Response Function 23.1
Violation Notification 23.2
Keypad Response 23.2
Operator Response 23.3
Condition 23.3
Process State 23.3
Multiple Access Violations 23.4
Door Operation While Violation is Active 23.4
Keypad Alarm Response Configuration 23.4
Defining the Alarm-Response Code 23.5
Defining a Reader 23.5
Enabling Keypad Alarm Response 23.6
Enabling a Badge 23.6
Disabling Keypad Alarm Response 23.7

24. Pre-Alarm Notification 24.1
Overview 24.1
Pre-Alarm Function 24.1
Pre-Alarm Notification Methods 24.1
Disabling Pre-Alarm 24.1
Pre-Alarm Configuration 24.3

25. Badge Trace 25.1
Overview 25.1
Badge Trace Configuration 25.1
Tracing a Badge 25.1

26. Double-Badge Transaction 26.1
Overview 26.1
Double-Badge Function 26.1
Double-Badge Reporting 26.2
Double-Badge Configuration 26.3

27. Monitoring Alarms 27.1
Overview 27.1
Prerequisites 27.1
What You Will Be Doing 27.2
The Alarm Monitor 27.2
Notification of Alarms 27.2
Responding to An Alarm 27.4
Removing A Single Alarm 27.6
Purging A Single Alarm 27.7
Removing All Alarms 27.7
Controlling Alarm Outputs 27.8

28. Monitoring Activity 28.1
Overview 28.1
Prerequisites 28.1
What You Will Be Doing 28.1
Badge Monitor 28.2
Operator Monitor 28.5
Swipe and Show Monitor 28.6

29. Controlling Outputs 29.1
Overview 29.1
Prerequisites 29.1
What You Will Be Doing 29.1
Controlling an Output from an Input Group 29.2
Controlling an Output from an Output Group 29.3
Controlling an Individual Output 29.4

30. Viewing Status 30.1
Overview 30.1
Prerequisites 30.1
What You Will Be Doing 30.1
Viewing Status By Micro 30.2
Viewing Status By Area 30.3
Viewing Status by Door 30.4

31. User Customization 31.1

Overview 31.1
Invocation.....31.3
User Interface.....31.4
Main Window 31.4
Language Selection Dialog 31.5
Table Selection Dialog 31.6
Change Field Dialog 31.8

32. National Language Support 32.1

Overview 32.1
Limitations 32.1
Installation 32.2
Language Translation.....32.5
Locale 32.6
Preparing for Translation.....32.7
Translating Text 32.8
Installing Translations.....32.12
buildlang 32.12
buildmeaning.....32.12
upddb.....32.13
avlang 32.13
Translation Installation Example.....32.13
Modifying Translations.....32.14
Selecting An Operator Language 32.14
Selecting The Primary Language.....32.15
Selecting Login Screen Language 32.15
Error and Warning Messages.....32.16
Customizing Badge and Department Screens 32.16

33. In Case of Problems..... 33.1

Overview 33.1
What You Will Be Doing.....33.1
Conventions 33.2
Using the CMENU Utility 33.2
Diagnostics Subsystem.....33.2
Process Control Diagnostics 33.3
Check 33.13
Set 33.14
Clear 33.16
WatchLog 33.17
Micro Utilities.....33.17
State.....33.18
Offline 33.18
Online 33.18

Reset 33.18
Status Information from Micros 33.18
Alarms 33.19
Areas 33.19
Badges 33.19
Inputs 33.19
Input Groups 33.19
Mode 33.20
Outputs 33.20
Output Group 33.20
Outputs 33.20
Readers 33.20
Doors 33.21
Printer Utilities 33.21
Status 33.21
Kill 33.21
Stop 33.22
Clean 33.22
Start 33.22
Troubleshooting Guide 33.22

Appendix A: Changing the Picture Perfect System Host Name A.1
Rules and Restrictions A.1
Changing the Host Name A.2
Files and Database Tables A.3
Standalone A.3
Network Host A.3
Network Subhost A.4
Redundant A.4

Appendix B: TPS Alarms B.1
Overview B.1
Configuration Files B.2
/cas/db/text/tps.cfg B.2
/cas/db/text/tps.cfg.sample B.3
/cas/bin/tps_cfg.sh B.3

Appendix C: Firewall Configuration C.1
Setting a Fixed Port for the Client Server Task C.2
Changing the Fixed Port Used by the License Manager Task C.2
Web Browser Security C.3

Appendix D: Advanced Configuration D.1
Overview D.1
Multiple Tape Support D.1
Port Throttling D.2
Disk File Backup / Archive Configuration D.3
File System Monitor D.4
Database Space Monitor D.6
Resend List State D.7
Configuration D.7
Log Messages D.8
Alarm Save State D.9
Configuration D.9
Log Messages D.11
Auto-Logout (xidle) D.11
Files D.12
Restrictions D.13

Appendix E: Using the vi Editor E.1
Overview E.1
Modes E.1
Changing Modes E.1
Command Mode Functions E.2
Ex Mode Functions E.3
Editing the /etc/hosts File E.3

Appendix F: Alarm Routing and Bumping Using Picture Perfect Web Browser F.1
Overview F.1

Appendix G: Micro Facility Assignment Tool G.1
Overview G.1
Running the Tool G.1

Appendix H: Flow Diagrams H.1
Picture Perfect System Flow Diagram H.1
Picture Perfect Valid Badge Read Flow Diagram ... H.2
Example of a Communications Failure Detected by a Micro H.3
Example of a Bad Badge Detected by an Area H.3
Example of a Door Forced Condition Detected by a Door H.4

Example of a Problem Condition
Detected by a Sensor (DI) and Triggering
Both an Alarm and a Physical Output (DO)..... H.4
Example of a DI Used to Trigger a
Physical Output (DO) H.5
Example of the Door Exit DI and Sense DI Set-Up
Using Supervised Inputs to a 2SRP or 20DI H.6
Alarms Initiated by Micros H.7
Alarms Initiated by Areas H.7
Alarms Initiated by Doors H.7

Glossary GL.1

Index ..... Index -1

Customer Survey

Software Defect Report

List of Figures

Figure 3-1. Login Screen....3.1
Figure 3-2. Front Panel....3.3
Figure 3-3. Main Menu and Submenus....3.5
Figure 3-4. Example of a Form....3.6
Figure 3-5. Example of a Picklist....3.8
Figure 3-6. Function Buttons on a Form....3.9
Figure 3-7. View Window....3.11
Figure 3-8. Columns Picklist....3.12
Figure 3-9. Sort Window....3.12
Figure 3-10. Search Window....3.13
Figure 3-11. Title Bar and Buttons....3.15
Figure 4-1. Terminals Form....4.2
Figure 4-2. Modems Form (Top)....4.6
Figure 4-3. Modems Form (Bottom)....4.8
Figure 4-4. Sample AIX Connection Diagram for Micros Setup 4.10
Figure 4-5. Ports Form....4.12
Figure 4-6. Network Micro Ports Form....4.16
Figure 4-7. Printers Form....4.18
Figure 4-8. Email Form with Facility Picklist....4.20
Figure 4-9. Routings Form....4.21
Figure 4-10. Printer Routing....4.23
Figure 4-11. E-Mail Routing....4.24
Figure 4-12. Badge Formats Form....4.26
Figure 4-13. Parameters Form (Top)....4.28
Figure 4-14. Parameters Form (Top Middle)....4.30
Figure 4-15. Parameters Form (Bottom Middle)....4.31
Figure 4-16. Parameters Form (Bottom)....4.35
Figure 4-17. Departments Form....4.37
Figure 4-18. Personnel Type Form....4.39
Figure 5-1. Facility/Facility Profile Overview....5.1
Figure 5-2. Facility Form....5.3
Figure 5-3. Delete Facility Window....5.4
Figure 5-4. Facility Profile Form....5.6
Figure 5-5. Facility Set Manager....5.11
Figure 5-6. Clients Menu - Change Active Facility Set....5.11
Figure 5-7. Facility X....5.14
Figure 5-8. Facility Y....5.14
Figure 5-9. Facility Z....5.14
Figure 5-10. Update Badge Facility Profile....5.15
Figure 5-11. View Operator Facility Profile....5.16
Figure 5-12. Facility Window....5.17
Figure 5-13. Facility Profile Window....5.17
Figure 5-14. Current Profile Column....5.18
Figure 5-15. Permissions Form....5.18
Figure 5-16. Operator Permission Window....5.19

Figure 5-17. Operator Form 5.20
Figure 5-18. Example: Facility Y Menu Options 5.20
Figure 5-19. Example: Global Facility Menu Options 5.20
Figure 5-20. Example: All Facilities Menu Options 5.21
Figure 6-1. Relationship Between Permissions and Permission Groups 6.2
Figure 6-2. Perm Group Form 6.3
Figure 6-3. Permissions Form 6.5
Figure 6-4. Permissions Form with Picklist for Badge Admin - Plant 6.7
Figure 6-5. Faclity Profile Picklist 6.8
Figure 6-6. Operators Form 6.9
Figure 6-7. Country Picklist 6.10
Figure 6-8. Permission Picklist 6.11
Figure 6-9. Change Password Window 6.11
Figure 7-1. Route Definitions Form 7.3
Figure 7-2. Route Points Form 7.5
Figure 8-1. Messages Form 8.3
Figure 8-2. Responses Form 8.4
Figure 8-3. Alarms Form 8.6
Figure 8-4. Alarms Form with Color Palette, Alarm Instructions, and Alarm Routing Picklist 8.10
Figure 8-5. Alarm Color Window 8.12
Figure 9-1. OutGroups Form 9.2
Figure 9-2. InGroups Form 9.5
Figure 9-3. Example of a Parent Input Group 9.10
Figure 9-4. Input Groups Form with Picklists 9.11
Figure 10-1. Common Micro Setup 10.2
Figure 10-2. Example of Direct Communication - Uni-directional Micros 10.4
Figure 10-3. Example of Direct Communication - Bi-directional Micros 10.4
Figure 10-4. Example of Dial-Up Communication 10.5
Figure 10-5. Sample Ethernet Configuration 10.8
Figure 10-6. Sample Token Ring Configuration 10.9
Figure 10-7. Micro Configuration 10.17
Figure 10-8. Micros Form (Top - Left) 10.18
Figure 10-9. Micros Form (Bottom) 10.20
Figure 10-10. Dial-Up Window 10.22
Figure 10-11. Micros Form (Right) Times in Seconds 10.25
Figure 10-12. The Keys Form 10.28
Figure 11-1. Micro Flash EPROM Upgrade Menu 11.3
Figure 11-2. Begin Flash Download 11.4
Figure 11-3. Available Hex Files 11.5
Figure 11-4. MicTool - FlashTool Main Screen 11.7
Figure 11-5. eFlash 11.9
Figure 11-6. Network eFlash File Popup 11.10
Figure 11-7. Default eFlash File Popup 11.11
Figure 12-1. Outputs Form 12.3

Figure 12-2. 32DI/DO Board Addressing Scheme 12.6
Figure 12-3. Outputs Form with Micro and Output Group Picklists 12.8
Figure 12-4. Inputs Form 12.10
Figure 12-5. Inputs Form with Picklists 12.15
Figure 13-1. Site Map with Access Control Areas 13.3
Figure 13-2. Categories Form 13.7
Figure 13-3. Categories List Box 13.8
Figure 13-4. Category Manager Window 13.9
Figure 13-5. Areas Form - Top 13.14
Figure 13-6. Areas Form - Bottom 13.17
Figure 13-7. Common Reader Setup 13.21
Figure 13-8. In/Out Reader Setup with Single Door 13.21
Figure 13-9. Readers Form (Top) 13.22
Figure 13-10. Readers Form (Bottom Right) 13.25
Figure 13-11. Common Door Setup 13.31
Figure 13-12. Supervised Door DI and Exit DI Setup 13.32
Figure 13-13. Doors Form, Top 13.35
Figure 13-14. Doors Form, Bottom Left 13.36
Figure 13-15. Doors Form, Bottom Right 13.39
Figure 14-1. Badge Removal Popup 14.8
Figure 14-2. Remove Record Popup 14.8
Figure 14-3. Badges Form - Top Left 14.11
Figure 14-4. Badges Form (Top Right) 14.12
Figure 14-5. Badges Form (Top Middle - with Seed Counter enabled) 14.13
Figure 14-6. Badge Encode Format Window 14.16
Figure 14-7. Badges Form (Bottom Right) 14.17
Figure 14-8. Badges Form (Bottom Left) 14.19
Figure 14-9. Temporary Categories Form 14.21
Figure 14-10. Badge Form - Advanced Scheduling 14.22
Figure 14-11. Badges Form (Bottom Middle) 14.24
Figure 15-1. Master Records Window 15.3
Figure 15-2. Generator Form 15.4
Figure 16-1. Mode Creation Form 16.6
Figure 16-2. Mode Command Form 16.7
Figure 16-3. Mode Events Form 16.10
Figure 16-4. Runtime Portion of an Events Form 16.12
Figure 16-5. Start/End Portion of an Events Form 16.13
Figure 16-6. Area Events Form (Top) 16.16
Figure 16-7. Area Events Form (Middle) 16.17
Figure 16-8. Areas Form, Categories Window 16.20
Figure 16-9. Area Events Form, View Window 16.20
Figure 16-10. Examples: Areas Form, Categories Window 16.21
Figure 16-11. Area Events Form (Bottom) 16.22
Figure 16-12. Reader Events Form - Top 16.26
Figure 16-13. Reader Events Form - Bottom 16.27
Figure 16-14. Door Events Form 16.31

Figure 16-15. Alarm Events Form 16.34
Figure 16-16. InGroups Events Form 16.38
Figure 16-17. OutGroups Events Form 16.42
Figure 17-1. Facility Profile Window 17.3
Figure 17-2. Operations Pop-Up Menu 17.4
Figure 17-3. Access/Secure List Example - Input Groups 17.5
Figure 18-1. History Dates Window 18.3
Figure 18-2. Archive Dates Window 18.4
Figure 18-3. Archive Backup Window 18.5
Figure 18-4. Table Backup Window 18.6
Figure 18-5. Backup Events Form 18.9
Figure 18-6. Restore Window with Media Pop-up 18.11
Figure 19-1. History Form 19.2
Figure 19-2. Open Report Picklist - History 19.3
Figure 19-3. Save Report As Window 19.4
Figure 19-4. Print Options Window 19.4
Figure 19-5. Delete Report Picklist - History 19.5
Figure 19-6. Badge Query Window 19.7
Figure 19-7. Format Columns Window 19.8
Figure 19-8. Format Page Window 19.9
Figure 19-9. Format Summary Window 19.11
Figure 19-10. Variables Picklist 19.12
Figure 19-11. Report Events Form - History 19.17
Figure 20-1. SQL Form 20.2
Figure 20-2. Open Report Picklist - SQL 20.4
Figure 20-3. Save Report Query As Window 20.5
Figure 20-4. Delete Report Picklist - SQL 20.6
Figure 20-5. Page Setup Window - SQL 20.6
Figure 20-6. Print Report Window 20.7
Figure 20-7. SQL Names Picklist 20.8
Figure 20-8. Table Names and Column Names Picklists 20.9
Figure 20-9. Example of a Pre-Loaded SQL Report 20.10
Figure 20-10. SQL Syntax for Embedded Variables 20.18
Figure 20-11. Example of Linebreak 20.19
Figure 20-12. Example of Pagebreak 20.20
Figure 20-13. Report Events Form - History 20.25
Figure 22-1. Example of Elevator Control - Method 1 ..... 22.3
Figure 22-2. Example of Elevator Control - Method 2 ..... 22.5
Figure 22-3. Number of Floors Field on Parameters Form 22.8
Figure 22-4. Type Field on Micros Form 22.8
Figure 22-5. Type Field on Readers Form 22.9
Figure 22-6. Outputs Form Configured for Elevator-Floor Button 22.10
Figure 22-7. Inputs Form Configured for Elevator-Floor Button 22.12
Figure 22-8. Elevator Form 22.13
Figure 22-9. Floor Description Window 22.14
Figure 22-10. Example of Increment Floors 22.15
Figure 22-11. Example of Decrement Floors 22.16

Figure 22-12. Micro/DO Config 22.17
Figure 22-13. Reader/DO Config 22.18
Figure 22-14. Reader/DI/DO Config.....22.19
Figure 22-15. Category Floors Form.....22.20
Figure 22-16. Select Floors Form 22.21
Figure 22-17. Doors Form Configured for Elevator Door 22.22
Figure 22-18. Badge Query Window.....22.23
Figure 23-1. Alarm-Response Code Field on Micros Form.....23.5
Figure 23-2. Badge and Keypad Field on Readers Form 23.5
Figure 23-3. Keypad Alarm Response Field on Doors Form 23.6
Figure 23-4. Keypad Alarm Response Field on Badges Form....23.7
Figure 24-1. Pre-Alarm Fields on Top of Doors Form.....24.3
Figure 24-2. Pre-Alarm Field on Bottom of Doors Form 24.4
Figure 25-1. Badge-Trace Routing Portion of Parameters Form 25.1
Figure 25-2. Control Portion of Badges Form 25.2
Figure 26-1. Reader-Control Portion of Readers Form.....26.3
Figure 26-2. Interval-Time Portion of Readers Form 26.3
Figure 26-3. Reader Portion of Reader Events Form 26.3
Figure 27-1. Alarm Monitor Window.....27.2
Figure 27-2. Alarm Alert Window 27.3
Figure 27-3. Alarm Response Window 27.3
Figure 27-4. Alarm Response Window with Responses Picklist.27.4
Figure 27-5. Alarm Response Window with Response Too Long Warning 27.5
Figure 27-6. Alarm Response Window with Logged and New Responses.....27.6
Figure 27-7. Alarm Response Window with Remove Function Disabled.....27.7
Figure 27-8. Purge All Alarms Window 27.8
Figure 27-9. Control Outputs Window.....27.8
Figure 28-1. Activity Monitor Window with Monitor Control Picklist.....28.4
Figure 28-2. Example of a Badge Activity Message 28.4
Figure 28-3. Example of an Operator Activity Message.....28.5
Figure 28-4. Example of a Swipe and Show Activity Message ...28.7
Figure 29-1. Control Outputs Form 29.2
Figure 29-2. Progression of Windows in Control Outputs Form..29.4
Figure 30-1. Status Form 30.2
Figure 30-2. Progression of Windows for Status by Micro 30.2
Figure 30-3. Progression of Windows for Status by Area 30.3
Figure 30-4. Sample Door Status.....30.4
Figure 31-1. Badge Holder Customization 31.1
Figure 31-2. User Fields Window from Badges Form 31.2
Figure 31-3. User Fields in Departments Form.....31.3
Figure 31-4. User Customization Window.....31.4
Figure 31-5. Language Selection Dialog.....31.6
Figure 31-6. Table Selection Dialog.....31.7
Figure 31-7. Change Field Dialog 31.8
Figure 33-1. Utilities Menu 33.2

Figure 33-2. Diagnostics Subsystem Menu 33.3
Figure 33-3. Dump PC Main Utilities Menu..... 33.4
Figure 33-4. Queues, Memory, Communications Screen..... 33.4
Figure 33-5. Alarms, Flags, Devices, Counts 33.7
Figure 33-6. Micro Map..... 33.8
Figure 33-7. Micro Status 33.10
Figure 33-8. Port Records 33.12
Figure 33-9. Host Records..... 33.13
Figure 33-10. Check Current Diagnostic Levels 33.13
Figure 33-11. Set Diagnostic Levels Menu..... 33.14
Figure 33-12. Clear Diagnostic Levels Menu..... 33.17
Figure 33-13. Micro Utilities Menu 33.17
Figure 33-14. Status Information From Micros Menu 33.18
Figure 33-15. Printer Utilities Menu 33.21
Figure D-1. File System Monitor Notification Message D.4
Figure D-2. Database System Monitor Notification Message..... D.6
Figure H-1. System Flow Diagram H.1
Figure H-2. Valid Badge Read Flow Diagram H.2
Figure H-3. Comm Failure Detected by Micro..... H.3
Figure H-4. Bad Badge Detected by Area..... H.3
Figure H-5. Door Forced Condition Detected by Door H.4
Figure H-6. Problem Condition Detected by Sensor (DI) H.4
Figure H-7. DI Used to Trigger DO..... H.5
Figure H-8. Door Exit DI and Sense DI Setup..... H.6
Figure H-9. Alarms Initiated by Micros H.7
Figure H-10. Alarms Initiated by Areas H.7
Figure H-11. Alarms Initiated by Doors H.7

Using This Manual

Chapter 1

Purpose

This manual provides instructions for initial setup and configuration of the system and for configuration changes to an existing system. It also contains information for operating the system once it is installed.

Who Should Read this Manual

This manual is intended for system administrators who are responsible for the planning and implementation of the system design, and who perform system configuration and setup using Picture Perfect™ forms that are accessible only to the master-level operator.

Operators using the system should read the chapters which relate to their duties.

The material in this manual has been prepared for persons responsible for, and familiar with the security needs of the customer facility.

NOTE If you have a previous version of this manual, you may notice changes since the last publication, marked by a change bar which is a vertical line in the margin that visually identifies significant new or revised information.

Terminology

Click

To “click” means to press and release a mouse button while the pointer is on a designated area of the screen in order to display a window or select an option. The press-and-release makes a clicking sound.

The term “double-click” means to press and release a mouse button twice in rapid succession. “Left-click” and “right-click” mean to click the button on the left or right side of the mouse.

Select

The word “select” indicates that you choose an item from the current menu, submenu, form, or picklist displayed on the screen. Use the mouse

or the cursor keys to select the item. For example: Select **Devices**, then **Terminals**.

The statement above tells you to select a certain menu (**Devices**) and then to select a certain submenu that will appear (**Terminals**). If you make the selections with a mouse, you will point to the **Devices** icon and click the left mouse button. When the submenu icons appear, you will point and click on the **Terminals** icon to select this submenu.

If you make the selections with a keyboard, you will use the cursor keys instead of a mouse pointer, and the Enter key instead of the left mouse button.

Press

The phrase "press the _____ button" means to use the mouse (or the keyboard) to "press" a designated button on the screen. To press a button with the mouse, point then click the left button. To press a button with the keyboard, use the Tab key and press Enter or Spacebar.

Command

The word "command" indicates a command which should be typed as specified.

Toggle

The word "toggle" indicates that user should turn an option on or off. The state of the toggle button determines whether or not the option is turned on or off. If the toggle button is pushed in (darkened), the option which it represents is turned on. If the toggle button is not pushed in (lightened), it is off.

Notational and Typographical Conventions

This manual uses certain notational and typographical conventions to make it easier for you to identify important information.

Item	Example
Titles, Menu Items, Field Names, Forms	**Administration**
Keys	Keyboard keys appear as graphics. For example, Enter denotes the key labeled "Enter" or "Return". F1, F2, etc., indicate the function keys across the top of the keyboard. Keys that display on the screen as push buttons appear in bold such as, **Save**, **Ok**, **Close**.
Operating Systems	Picture Perfect 2.0 runs on two operating systems: IBM's AIX and Red Hat Linux. When the documentation differs depending on the operating system in use, the appropriate information is given for each. The following symbols designate information particular to an operating system: AIX Information for an AIX system follows this symbol. Linux Information for a Linux system follows this symbol.
Default Entries	During the installation of the software, you will be prompted with questions. Following the question, a default answer may be shown in brackets, for example: `[y]` To accept the default answer, you may either press Enter or you may type `y` and press Enter. For clarity, in this manual we will instruct you to type `y` Enter.

Text you enter	Examples of commands show the exact spacing and upper- or lower-case letters for you to type. For example:
	`rc.pperf -k`
	If an example ends with Enter, type the command then press Enter. For example:
	`rc.pperf -k`Enter
	
	To reduce the confusion between similar numbers and letters, namely the number 1 and the lowercase letter l along with the number 0 and the letter O, refer to the following list:
	
	`1234567890`
	`ABCDEFGHIJKLMNOPQRSTUVWXYZ`
	`abcdefghijklmnopqrstuvwxyz`

Notes	Provides additional information. The following graphic is displayed on the left side of the page:

Item	Example
Caution	Provides information you should know to avoid potential problems, before continuing. The following graphic is displayed on the left side of the page:
Warnings	Provides information you MUST know to avoid consequences of a disastrous nature, before continuing. The following graphic is displayed on the left side of the page:
Instructions	Provides instructional information in a step-by-step format.

Related Documentation

- *Picture Perfect 2.0 AIX Edition Installation Guide*
  This manual is a step-by-step guide to help the system administrator connect hardware (HFT subsystem, serial port adaptors, ASCII terminals, modems, printers, tape drives, X Terminals, microcontrollers, etc.); boot/install AIX®; configure AIX for the network, micro communication lines, printers, and X Terminals; install the Picture Perfect software and set up X Terminals.
- *Picture Perfect 2.0 Linux Edition Installation Guide*
  This manual is a step-by-step guide to help the system administrator connect hardware (PCs, serial port adapters, modems, printers, tape drives, X Terminals, micros); boot/install Linux®; configure Linux for the network, micro communication lines, printers and X Terminals; install Picture Perfect software and set up X Terminals.
- *Picture Perfect Enterprise System Administration Guide*
  This document includes information regarding the installation and configuration of the network Picture Perfect host and subhosts, as well as management of the networked system.
- *Picture Perfect Redundant System Administration Guide*
  This manual provides instructions for the software installation, configuration, and operation of the Picture Perfect Redundant System (PPRS) software.

System Overview

Chapter 2

Introduction

The Picture Perfect system is an integrated, computer-based security system that provides access control to designated areas within a site or facility. This system uses the IBM RISC System/6000® or Intel Pentium® based servers, configured to meet the exact needs of the user.

Picture Perfect uses industry leading products such as the Linux® operating system, Informix® Dynamic Server, and X-windows, IBM's graphical interface. The Picture Perfect operator interface is picture/icon-based.

The Picture Perfect platform functions in large measure as a database server. The majority of access, alarm, and time-of-day decisions are made locally by intelligent microcontrollers. Data necessary to make these intelligent decisions is downloaded from the host to the micro as required. Since the micros are making the majority of these decisions, the host is free to concentrate on operator functions such as data entry, database queries (requests for data), and report generation.

The system controls access readers using either magnetic-stripe, barium ferrite, Wiegand, bar code, or proximity technologies. Readers with keypads for user-defined PIN entry are also accommodated.

The smallest system will monitor thousands of badge records, transaction history records, digital inputs (alarm contacts), and digital outputs. Capacity limits depend on system resources. The system supports multiple operator work stations and printers.

Scheduling features allow time allocations for use of readers and alarms. Micro/5's have the capability to perform the majority of scheduling tasks. This provides the user with full scheduling capabilities, even when a communication problem has caused the micro and host to temporarily stop talking to each other.

The user interface is image-driven and user-friendly. Small images, called icons, are used to visually show the operator what is being selected. These icons provide the operator with various options which lead to input screens, providing the ability to add, change or delete information. By assigning operator levels to individuals, operators can be restricted in their control of the system. They can be denied the authority to change

previously set parameters, and may be able to view information on a screen, but may not be permitted to modify or print out the information.

All conditions sensed by the system can be assigned unique messages, which can be displayed on the computer screen and made available to the operator. A sensor on a door can be coded within the system, not only to activate an alarm if the door is opened, but to notify the operator, using the screen, where the breach occurred and what action to take. Alarms can be given priorities for action in the event that multiple alarms occur. All alarms are provided with an audio display tone to alert security personnel of severe conditions.

The system maintains a history file of all occurrences reported by its Micro/5's (access attempts, alarms, etc.). Management reports are available to provide the System Manager with the activities within the system any time, on demand.

The program is personalized by the customer to his specific requirements and configuration by simple, pop-up windows and menus. An operator can change the size and position of a screen.

The system uses a state-of-the-art relational database management system *(RDBMS)* which allows the operator to query the database using menu driven forms. These forms allow the operator to specify data fields requested, logical relationships between the fields, and the order in which the fields are to be selected. Once the request for data is made and the data is found, the operator can then scroll through data backwards and forwards. If desired, the operator can print the requested data by selecting the appropriate option.

The system architecture uses a distributed approach, comprised of Micro/5s, and the host processor.

AIX

On an AIX system, all terminals are graphics terminals except the host console which could be a character-based terminal.

Linux

On a Linux system, all terminals (including the host console) are graphics terminals.

Operating Features

- **UNIX-like Operating System** (AIX or Linux) provides multitasking, multi-user capabilities. Multiple tasks can be performed by multiple users simultaneously. An operator can view several windows at once.
- **Host System** architecture is powerful enough to support the operating system and relational database management systems.
- **Graphical Menu-Driven Operator Interface** almost completely frees you from the keyboard. Color menus and pop-up windows provide various options which lead to input forms (screens) where you can

add, change, or delete information. Menus use icons (symbolic pictures) rather than text so you can point and click with a mouse to select a task or operation.

- **Pop-Up Window Alarm Messages** appear on whatever form (screen) is currently displayed. You can continue with the current form or exit to an alarm response form.
- **Online Help (HTML-based).** Click the **Help** button to display a pop-up help window for any form or picklist. **Help** constitutes an on-line reference manual that explains every window and field in each form.
- **Powerful Query Function.** Picture Perfect uses Informix Dynamic Server, a relational database management system (RDBMS) with a query function that reduces the need for printed reports. The RDBMS frees you from canned search criteria. Use the **Find** and **View** functions to query and display data. As an alternative to printing a report, you can display the report on screen and scroll back and forth through data. The RDBMS allows you to define direct relationships between separate database tables so that a single report joins multiple tables. The report function also lets you customize reports with Structured Query Language (SQL) so you can pinpoint just the data you need.
- **Real-Time Monitoring.** Badge activity displays in real time on a scrolling window, where you can scroll backward and forward through the transaction data or perform a transaction search.
- **Database Protection.** The system database is protected from unauthorized use by the **Operator Permissions** feature which controls (using a login ID and password) each operator's authorization to display or update each system screen and to print reports.
- **User-Defined Schedules.** The system provides an interface for user-defined schedules. For example, an area can be scheduled for general employee access during business hours, but restricted to selected employees after hours. All schedules can be manually overridden from the operator's console. If the host and Micros stop communicating, Micro/5s continue processing all resident schedule changes.
- **Operator Input Validation.** All system forms (screens) and menus provide extensive data-entry error checking. The system will reject a form if fields do not contain acceptable data; therefore, bad data cannot corrupt the database.
- **Operator Activity Monitoring.** The activity of all system operators can be saved on the hard disk.
- **User-Defined Alarms.** Alarms may be assigned priorities to control processing in the event of simultaneous alarms. Multiple-action

messages may be configured to notify the operator when and where the alarm is occurring and what actions to take.

- **Digital Outputs to Operate Output Devices.** Inputs (digital or logical) trigger digital outputs which can operate output devices (door locks, lights, bells, sirens).
- **Transaction History Processing.** The standard system stores history records online, including badge, alarm, and operator activity transactions which can be archived to diskette or streaming tape. A larger hard disk can be configured to store more history records online.
- **User-Defined Reports.** The reports feature provides an SQL (Structured Query Language) interface to the online Picture Perfect database so that you can use ANSI standard SQL select statements to query the database and generate reports. (Pre-loaded SQL reports satisfy standard administration requirements.) The query function allows unlimited selection criteria and up to eight sort criteria. The relational database allows an SQL statement to join multiple database tables in one report, sorting the result by any selected field.
- **Micro/5, Micro/5-PX, Micro/5-PXN, Micro/PX-2000, Micro/PXN-2000 Support for Readers, Alarms, Scheduler.** During normal operation these micros use their resident databases to make local access-control decisions. In the event of communication failure with the host, these Micros control and store reader and alarm activity and also implement scheduler events.
- **Global Antipassback Supported.** Any reader on any Micro/5, Micro/5-PX, Micro/5-PXN, Micro/PX-2000, Micro/PXN-2000 (except a dial-up Micro) can be configured as an antipassback reader.
- **Keypad Reader Support for PIN Entry.** Keypad reader support is provided to enhance security.

Optional Features

- The fully integrated Alarm Graphics System allows you to develop alarm maps that display (in real time) when an alarm occurs.
- The Import/Export program enables the transfer of Picture Perfect database information to and from external databases (such as a personnel database). The import/export utility allows other applications to interface with the Picture Perfect database.
- The Redundant System option allows two host systems (primary and backup) to operate in a fault-tolerant configuration.
- The Imaging option allows a picture of the badgeholder to be displayed on screen, as well as Swipe and Show.

- The Enterprise option allows several hosts to operate together in a network environment.
- The Guard Tours option allows you to monitor the progress of a security officer as he or she tours the facility premises at specified intervals, and to obtain hardcopy reports that show a tour history.

Support Services

GE Interlogix and its Business Partners offer a full range of customer support services, including site surveys, installation supervision, systems acceptance, and training, with total turnkey installation capabilities. Services are options at the discretion of the customer.

Training is extensive and all-inclusive. It provides for the needs of customer personnel at all levels—management, technical, and system operations. Classes are conducted by expert training personnel and provide extensive hands-on experience.

GE Interlogix offers a Protection Plan that provides a full range of maintenance options after the one-year factory warranty (or the 90-day software warranty) expires.

The Protection Plan provides customers with all program updates and provides an emergency hotline for ongoing system support.

What's New

Red Hat® Linux® 7.3 Operating System

Red Hat Linux 7.3 delivers cutting edge technologies, new features and updated core components while improving ease of use and maintenance. Red Hat Linux is a flexible, versatile solution for several types of deployments, from secure Web serving to personal productivity workstations.

AIX 5.1L Operating System

As an open UNIX solution, AIX 5L allows you to run the applications you want on the hardware you want, scaled to the size you need—bringing you new levels of flexibility.

Informix Dynamic Server IDS 2000 9.3

IBM Informix® Dynamic Server ™ combines the robustness, high performance, and scalability of the Informix relational database manager system, RDMS, with the advanced object-relational technology to store, retrieve, and manage rich data intelligently and efficiently. IBM IDS is built on IBM Informix Dynamic Scalable Architecture™ (DSA) - the goal of which is to provide the most effective parallel database arhcitecture

available, to help manage increasingly large and complex databases while substantially improving overall system performance and scalability.

Increased Categories

This new option, which can be selected at installation, increases the former limitation of 32 categories per badge to 96, and the former limitation of 10 categories per area to 32. A minimum firmware level of 2.0 is required. For more information on this new feature, refer to Chapter 13 - Categories, Areas, Readers, and Doors.

eFlash

A new method of downloading micro firmware which does not require the micro to be in maintenance mode. For more information on this new feature, see Chapter 11 - Flashing Micros.

Partitioning

Picture Perfect 2.0 has incorporated the database partitioning formerly available only through Secure Area Manager (SAM) and Access Vision, through the addition of Facilities, Facility Profiles, and field level permissions. For more information on this new feature, see Chapter 5 - Facilities and Facility Profiles.

E-Mail Alarm Routing

The e-mail interface provides an alternative routing system for Picture Perfect alarm messages. Picture Perfect alarm information can now be routed to an external e-mail address, alphanumeric pager, or message capable cellular phone. For more information on this new feature, see Chapter 7 - Alarm / Activity Monitor Routing.

Seed Counter

Badge production capabilities have been enhanced to provide support for a seed counter . This new feature provides a way to automatically generate a unique Id number for each badge. For more information on this new feature, refer to the following:

- Chapter 14 - Badges
- *Picture Perfect Installation Guide*, Chapter 6 and Appendix G.

Documentation

- The Picture Perfect 2.0 Administration Guide can be viewed in its entirety using the Xpdf Viewer.
- Other related Picture Perfect manuals are available in .pdf format on the Picture Perfect 2.0 CD.

HTML Help

Picture Perfect 2.0 delivers a browser independent HTML-based help with a sophisticated easy-to-use user interface that includes a table of contents, index, related topics, and full-text search.

NOTES

Getting Started

Chapter 3

Overview

This chapter familiarizes you with the techniques required to interact with the Picture Perfect system. This includes information on using the mouse and using the various icons and windows, as well as system startup, shutdown, and login procedures.

In addition, this chapter lists the preferred order of tasks required for setting up your Picture Perfect system.

System Startup

To start Picture Perfect, power-on your system. Follow the power-on procedures outlined in your owner's manual. Wait for the Picture Perfect login screen (Figure 3-1) to appear on the terminal.

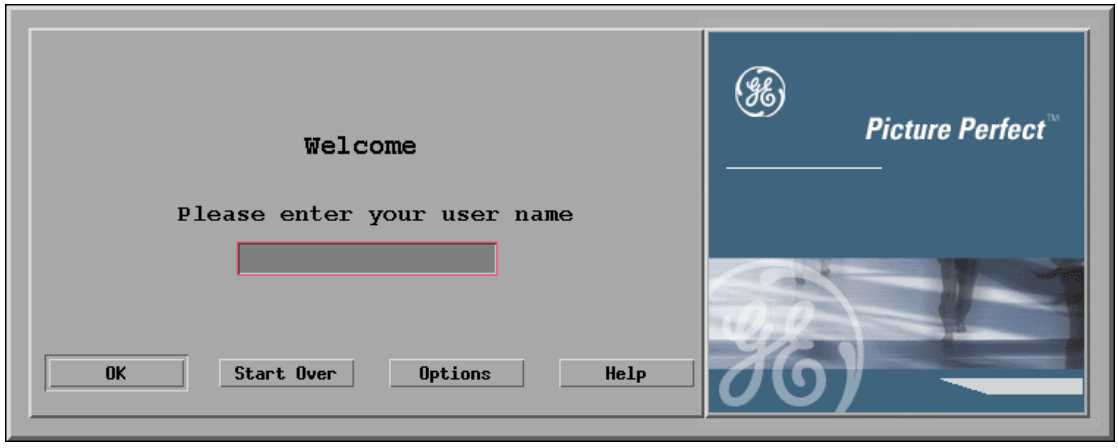


Figure 3-1. Login Screen

Log In

To operate the system, you need to log in. Your login ID, combined with your password, tells the system who you are and which functions you are authorized to perform (based on your operator permissions).

CAUTION Both of these fields are case sensitive, so enter the information appropriately. For instance, if your login ID is ‘dennis’, but you type ‘Dennis’ or ‘DENNIS’, the system will not recognize you.

The login ID consists of up-to-eight alphanumeric characters. Spaces should not be used as part of the ID, and it is recommended that all alpha characters be entered in lower case. The login ID typically incorporates the operator’s name and may include an initial or a number, such as **davidm** or **janet32**.

The password is a security measure that keeps unauthorized personnel from logging onto the system. Unlike the login ID, the password does not display on the screen as you type it. It is very important that your password remain confidential.

Care should be taken when selecting a password so that it cannot be easily guessed by anyone. It can be up-to-eight alphanumeric characters long, and can use any combination of numbers and upper- and lower-case letters. Spaces should not be used.

Select a password that you can easily remember (because it should not be written down anywhere), but one which is not likely to be guessed. Be creative in your selection. Some examples of good passwords are **NewtToe2**, **bliPPer9**, **z3EggLeg**. Some examples of bad passwords are your own name (in any form); the name of your pet, spouse, children; your license-plate number; your address; etc.

To set your password, or to change it if you think it is no longer secure, use the **Operators** form. See “Change Password” on page 3.21 and page 6.11. Or, you may left-click your mouse to display the **Client** menu and select **Change Password**.

➤ **To log in:**

1. Type your login ID after the prompt and press Enter .
2. Type your password after the prompt and press Enter . (The password does not display.)

After the system loads, the **Main Menu** appears. The icons that appear in the **Main Menu** represent the Picture Perfect functions you are authorized to use. See Figure 3-3. Main Menu and Submenus on page 3.5.

Log Out

CAUTION

It is important to log out of the system when you leave your workstation. This protects the system from unauthorized use, and also requires the next operator to log in.

If you are not familiar with mouse functions such as point, click, and drag, see "Using a Mouse" on page 3.14. If you are not familiar with the root window, see "Using a Window" on page 3.15. You can also use the Auto-Logout feature (Appendix D - Advanced Configuration).

➤ **To log out:**

1. Close all open forms by clicking on the **Quit** button for that form.
2. Click and hold down the right mouse button in the **Workspace** window (the background area of the screen).
3. Select the logout function. (Point-and-drag mouse pointer to select **Log out**.)
4. To exit the Picture Perfect **Logout Confirmation** window, you must quit the **Window Manager**. Select **Continue Logout** or click **Exit** on the **Front Panel** as shown in the next figure.

Using the Common Desktop Environment

Figure 3-2. Front Panel

➤ **To display the Picture Perfect Main menu (as shown in See Figure 3-3. Main Menu and Submenus on page 3.5.):**

Click on the icon as shown in Figure 3-2 above. When Picture Perfect is not running, the icon background turns red.

➤ **To display the Terminal Emulator:**

Click on the icon as shown in Figure 3-2 above. A terminal emulator is an application that displays a window that allows you to use Unix-like commands (AIX or Linux) to cut and paste text within or between terminal emulation windows. The command-line prompt is a special character that is displayed in your **`dtterm`** window after you press Return. It can be a %, <, $, or other special character. A small box or bar, called a

cursor, shows where characters will appear in the window when you type something on the keyboard.

➤ **To obtain Picture Perfect Help:**

Find and click on the arrow above the **General Help** icon as shown above in Figure 3-2 above. Then left-click on Picture Perfect Help which will appear in a pull-up menu.

➤ **To access various submenus:**

Press CTRL and right-click the mouse button.

➤ **To log out:**

Click the

button for **Logout Confirmation** as shown in Figure 3-2 above. You may select **Continue logout** or **Cancel logout**.

For more information on using other options on the **Front Panel**, refer to the **Front Panel Help** .

Main Menu and Submenus

The **Main Menu** appears as a vertical window frame containing several icons (Figure 3-3). Each of the icons represents a separate submenu. To bring more icons into view, click on the scroll bar or stretch the window frame. “Using a Mouse” on page 3.14 and “Using a Window” on page 3.15 for more information.

➤ **To display a submenu:**

Click on an icon. The icons of the submenu appear inside another window. When you click on a submenu icon, a form appears and the submenu disappears.

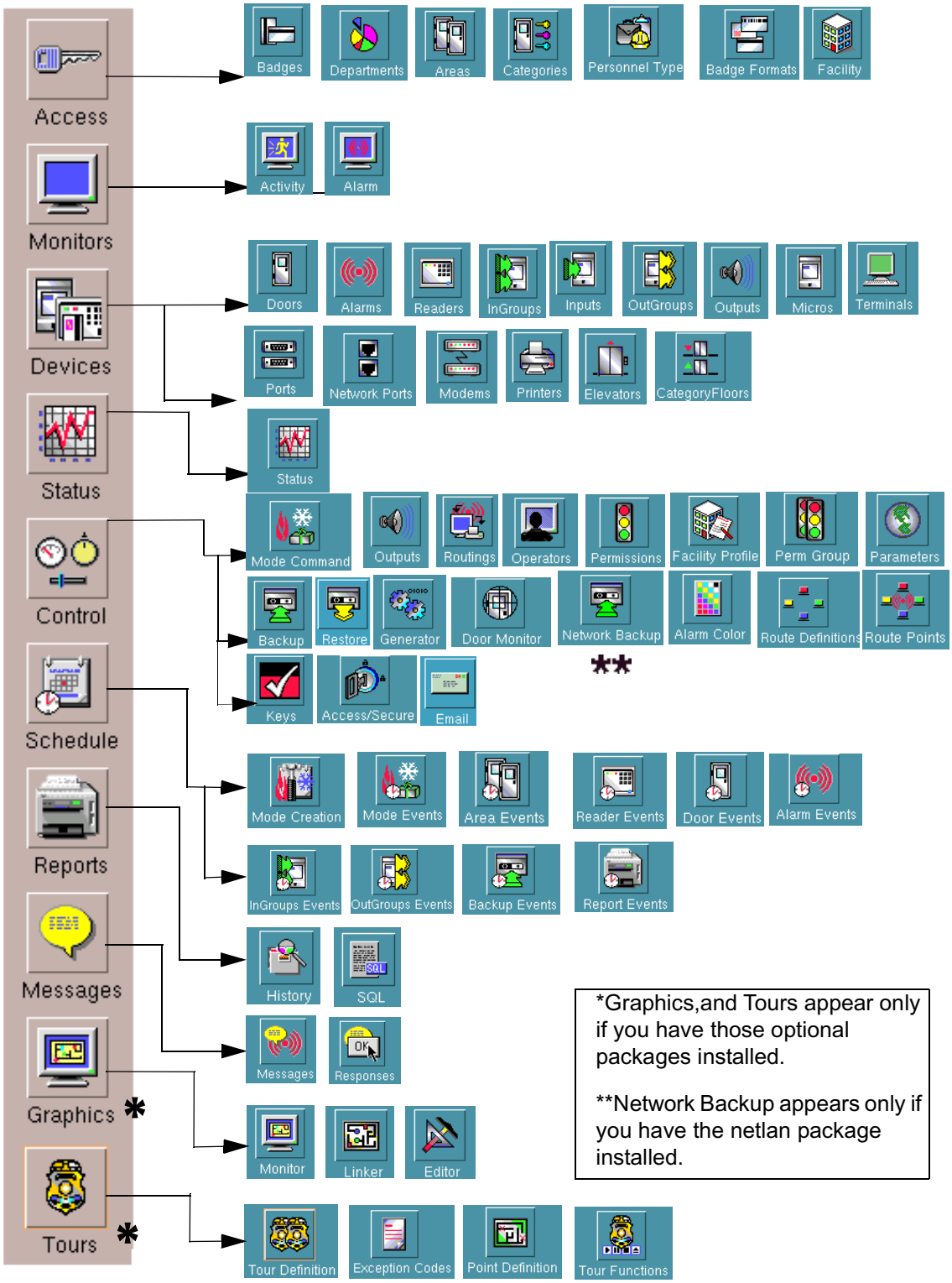


Figure 3-3. Main Menu and Submenus

Forms

Forms (Figure 3-4) are used to enter (type in) and display data. A form consists of text boxes (where you type data; also referred to as “fields”), square toggle buttons (to select multiple options), round-shaped radio buttons (to make “either / or” selections), and selection buttons (which you click to display a picklist).

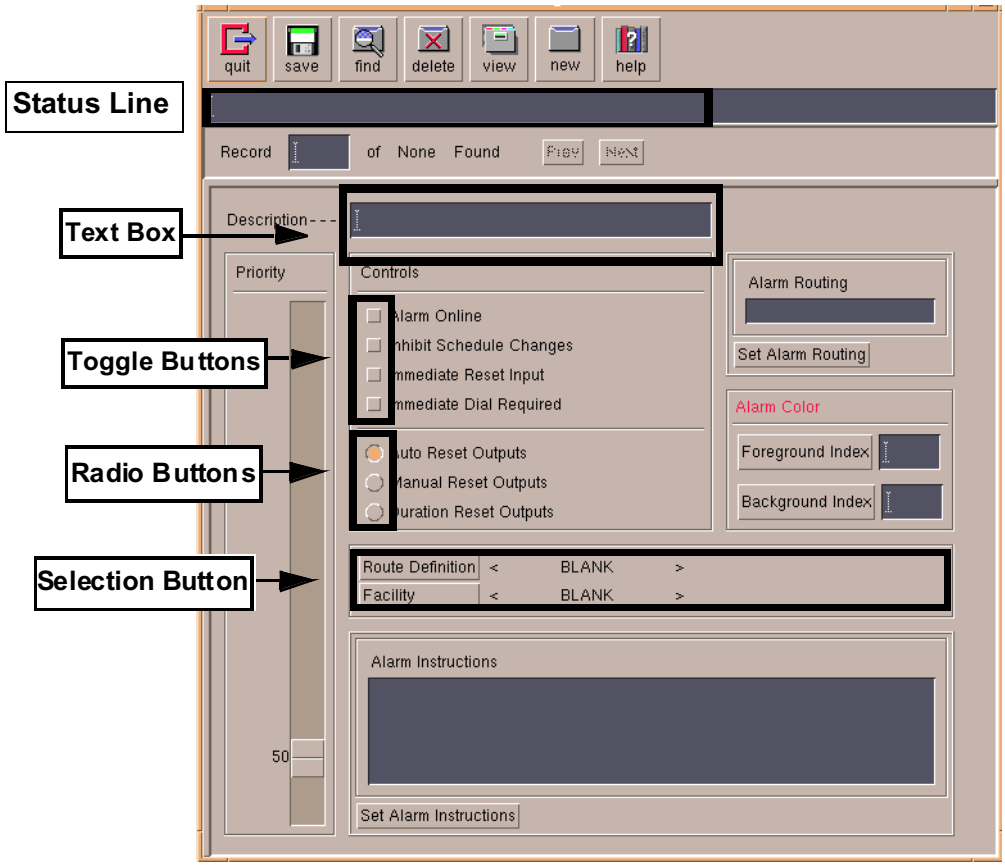


Figure 3-4. Example of a Form

Text Boxes

To use a text box, point to the box and click to make it active. You can then type data in that field. You may use the Tab key to move to the next text box, or Shift Tab to move to the previous text box.

Toggle Buttons

Toggle buttons are square, and appear beside one or more options. When several options are grouped together, toggle buttons indicate that more than one of these options can be selected.

Click on the button to toggle it on or off. When the button looks like it is pushed in (darkened), it is on. When it looks like it is popped out (lightened), it is off.

Radio Buttons

Radio buttons are round-shaped, and appear beside one or more options. When several options are grouped together, radio buttons indicate that only one of these options can be selected. As soon as another option is selected, the previously selected button is automatically de-selected.

Click on the button to select the option. When the button looks like it is pushed in (darkened), it is active. When it looks like it is popped out (lightened), it is inactive.

Selection Buttons and Picklists

Selection buttons are rectangular and labeled to indicate what type of picklist they will display when clicked. For example, a button labeled **Micros** will display a picklist of defined micros; a button labeled **Routing** will display a picklist of routing destinations. The contents of a picklist consist of items you added using other forms. For example, if you have not added your micros yet (using the **Micros** form), the **Micros** picklist will be empty when you try to assign a micro to a reader (using the **Select Micro** button on the **Readers** form).

A picklist (Figure 3-5) is a separate window that displays a scrolling list of options for that button's feature. You may be able to select several or only one of the options on the list, depending on the feature in use.

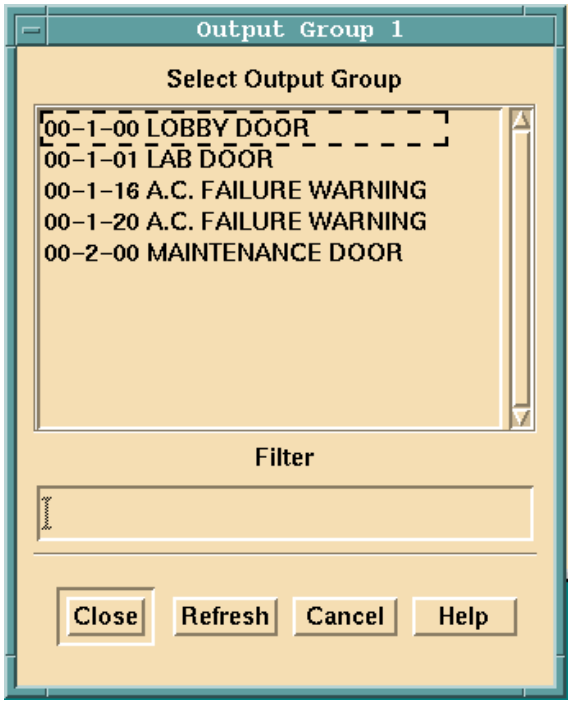


Figure 3-5. Example of a Picklist

When the picklist appears, click on an item to select it. Selecting an item highlights it. To assist in the location of an item or series of items, use the **Filter** field. Simply enter a search criteria in the **Filter** field and click on the **Refresh** button or press Enter. The search criteria entered in this field can be a specific match, such as `000-0-09 CPU DO GROUP`, or a pattern, such as `002*`.

If only one item is allowed, the first one selected will be de-selected when you click on another. If several items are allowed, you can highlight more than one. To de-select an item, click on it again.

Click the **Ok** or **Close** button on the picklist window to accept the selections and dismiss the picklist. Your selections will then display on the form by that button.

Buttons on the picklist window have the following functions:

Ok

Accepts the selections and dismisses the window. Some picklists use **Close** instead of **Ok**.

Close

Accepts the selections and dismisses the window. Some picklists use **Ok** instead of **Close**.

Cancel

Clears all selections made.

Refresh

Updates the contents of the picklist if additions or deletions have been made to the options since the form was displayed. For example, if you are selecting a permission from a picklist and see the one you want is not displayed, you can open the **Permissions** form, add and save the one you need, then click **Refresh** on the picklist window to reflect the additional option.

Help

Displays on-screen information regarding the use of the picklist.

Using Function Buttons

There are function buttons at the top of each form, as shown in Figure 3-6. Your operator permission determines which function buttons display for you, just as it controls which **Main Menu** icons you can see. Point and click with the mouse to click a function button.

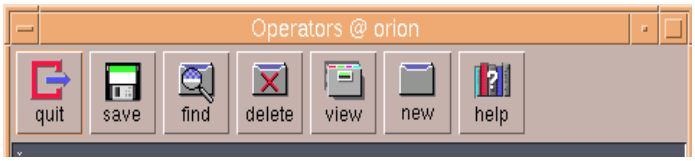


Figure 3-6. Function Buttons on a Form

The purpose of each function button is listed below:

Quit (F1)

Exits the form. If needed, be sure to save the form before you exit.

Save (F2)

Saves the data record currently displayed. If you have created a new record, it will be added to the database. If you displayed an existing record and made changes to it, this new version will *replace* the old record in the database.

Find (F3)

Locates specific data records based on selection criteria entered into any of the fields. This is useful if you want to change the data of an existing record. If you click **Find** without entering *any* search criteria, the system will find all of the data records in that table (such as all the badge records if you are using the **Badges** form). The number of

records found for the search will be displayed below the function buttons. Use the **Prev** and **Next** buttons to view the individual records. If the **Prev** button is grayed out, that means you are currently viewing the first record. If the **Next** button is grayed out, that means you are currently viewing the last record.

Symbols can be used to help delimit the search. For instance, the asterisk can expand the search in either direction around a string of characters:

- If you type **`Son*`**, the system will find records such as *Son*esta, *Son*ya, *Son*ny.
- If you type **`*son`**, the system will find records such as Robin*son*, Jack*son*, Nel*son*.
- If you type **`*son*`**, the system will find records such as Ma*son*ry, Sea*son*al, John*son*.

Other symbols and their functions include the following:

	Equal to (no symbol required)
!	Not equal to
>	Greater than
<	Less than
*	Match string
?	Match a single character
&	Logical *and*
|	Logical *or*
>=	Greater than or equal to
<=	Less than or equal to

For example, to find all records greater than **`A`** and less than **`L`**, type **`>A&<L`**. The system will find records **`Aa`** to **`Kz`**.

Delete (F4)

Deletes the record currently displayed from the database.

NOTE

On the **Badges** form, this button is labeled **Remove**. It is used to completely remove badge records from the database. See “Removing Badge Records” on page 14.7.

View (F5)

Views the record currently selected from the database.

NOTE

If there is no **Delete** option, then **View** is F4, **New** is F5, and **Help** is F6. If there is a **Delete** option, then **View** becomes F5, **New** becomes F6 and **Help** becomes F7.

➤ **To view the records located by the Find function:**

1. Click **View**. It may take a few moments for the system to prepare the data.

2. The data found appears on the **View** window (Figure 3-7) and includes all columns (fields) for those records. Resize the window to view more columns.

Figure 3-7. View Window

➤ **To limit the number of columns displayed in the *View* window:**

1. Click the **Columns** button. A picklist of columns will appear (Figure 3-8).

2. Select the columns you want to display, and de-select those you do not want, then click **Ok**. The **View** window will display the new information.

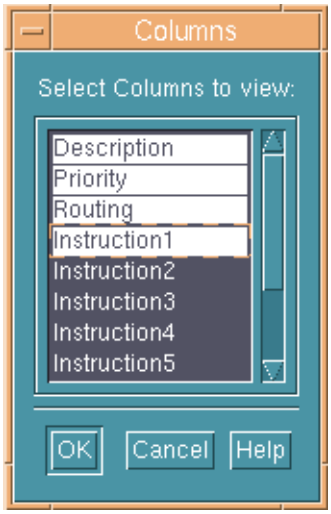


Figure 3-8. Columns Picklist

To control the order in which the information on the **View** window is sorted, click the **Sort** button. This will display the **Sort** window (Figure 3-9), which includes a picklist of columns. Select the one column you want to sort by, click a radio button to specify whether it should be in **Ascending** or **Descending** order, then click **Ok**. The **View** window will display the re-organized information.

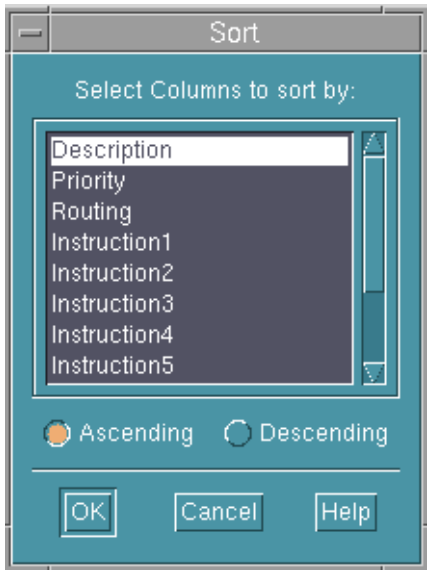


Figure 3-9. Sort Window

Search

Used to locate a certain record within a window of listed data.

➤ **To search for a record:**

1. Click the **Search** button to display the **Search** window (Figure 3-10), which includes a picklist of columns.

2. Select the one column you want to search by (such as “Last Name”), type search text (a full or partial name, such as “Peterson” or “Pet”) in the text box.

3. Click **Ok**. The system will locate the first record meeting this description and position it at the top of the data window.

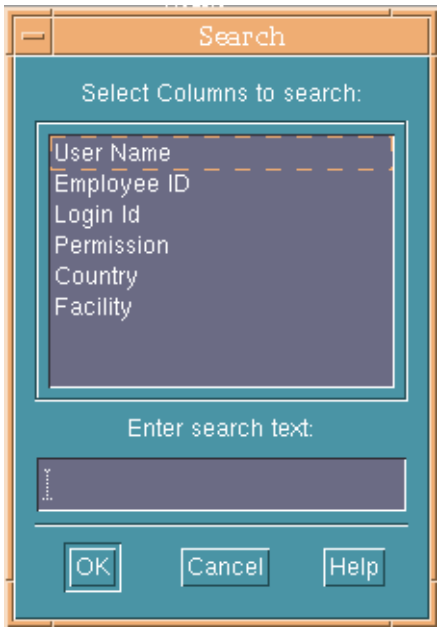


Figure 3-10. Search Window

New (F5)

Clears the form so you can add data for a new record.

NOTE

If there is no **Delete** option, then **View** is F4, **New** is F5, and **Help** is F6. If there is a **Delete** option, then **View** becomes F5, **New** becomes F6 and **Help** becomes F7.

On some forms, you will be given the option to **Clear** or **Copy** the data currently displayed. If you want all the fields to be blank, select **Clear**.

If you want to re-use much of the information already displayed, select **Copy**. This is useful when you are adding data records that are similar

to others, as it minimizes the time required for data entry. Not all the fields will copy, however. Critical fields will be cleared, requiring new input.

Freeze/Resume

Used on windows with scrolling, real-time data. Click **Freeze** to temporarily halt the output of new data so you can review the information currently on the screen. When this button is selected, it changes to **Resume**. Click **Resume** to continue the scrolling action.

Help (F6)

See Note on page 3.11 under **View**.

Provides on-screen information about the current form and its fields.

Adding or Changing Data

Similar procedures are used when adding or changing data records. The same forms are used, and the same access procedures are used.

When you add a record, you fill in a blank form and click **Save**.

When you change a record, you must first locate the one you want. This is done by entering your search criteria in the appropriate fields on the form, then clicking the **Find** button. If more than one record was found, use the **Prev** and **Next** buttons to locate the record you want or enter a record number in the record field and press (Enter). When the desired record is displayed, change the appropriate fields and click **Save**.

Whether you are adding or changing data, you must click **Save**; otherwise, the new information will be discarded.

Using a Mouse

A mouse is a hand-operated device used to move the pointer or cursor on the screen and select items, display windows, position windows on the screen, size windows, and iconify windows.

The mouse has two or more buttons that you push, and a ball that rolls when you move the mouse along a flat surface—such as a table or a pad.

There are several mouse operations:

Table 3-1: Mouse Operations

Mouse Term	Description
Point	Move the mouse to position the screen pointer at a certain spot.
Press	Push and hold down a button.
Release	Release a pressed button.
Click	Push and release a button without moving the mouse.
Drag	Move the mouse while pressing a mouse button.
Double-click	Click a mouse button twice in rapid succession without moving the mouse.
Point-and-click	Move the pointer to a screen object and click to select that object.
Point-and-drag	Point at an object (usually a window), press and drag until the pointer reaches the desired location, then release the button. Use this method to resize a window, reposition an object or window, or to make a menu selection from a pop-up window.

Using a Window

A window consists of several elements which have different features. These features are used to manipulate the window.

The Title Bar

The **Title Bar** (Figure 3-11) runs across the top of the window. It displays the name of the window and contains three buttons.

Figure 3-11. Title Bar and Buttons

One button is on the left, the other two are on the right. The buttons perform these functions:

Table 3-2: Title Bar and Buttons

Button	Location	Description
Window Menu	Left side	Opens the Window Menu.
Minimize	Second from right	Reduces the window to an icon on the taskbar.
Maximize	Far right	Enlarges the window to full-screen size. Press again to return window to previous size.

See "Using the Window Menu" on page 3.18 for details on menu functions.

➤ **To move the window and to shuffle (send) the window to the front or back:**

1. Press (hold down) the left mouse button anywhere on the title bar (except on the buttons),

2. Drag the window (displayed now as a wire frame) to the desired location, then release the button.

➤ **To shuffle (send) the window to the front:**

Click the left mouse button on the title bar.

➤ **To shuffle (send) the window to the back:**

Click the right mouse button on the title bar.

The Window Frame

The window frame is the narrow border on all four sides of the window. This area can be used to resize the window, or to shuffle the window to the front or back.

➤ **To resize a window:**

1. Press (hold down) the left mouse button anywhere on the frame.

2. Drag the frame edge either left / right or up / down (depending on which side of the frame you are using), then release the button. If you put the mouse pointer on a corner of the frame, you can resize both the height and width of the window simultaneously.

➤ **To shuffle (send) the window to the front:**

Click the left mouse button on the frame.

➤ **To shuffle (send) the window to the back:**

Click the right mouse button on the frame.

The Scroll Bars

Scroll bars appear when the contents of the window are too large for the window frame. If the contents are wider than the window, a scroll bar will appear at the bottom. If the contents are longer than the window, a scroll bar will appear at the side.

➤ **To scroll the window, you may use the scroll bars in the following ways:**

1. Click on the arrow in the direction you want to scroll (up, down, left, or right) for an incremental movement.

2. Drag the bar between the arrows in either direction for a slower, more controlled movement.

3. Click on the empty space between the arrows to jump to a certain spot.

Using the Window Menu

Click on the left title-bar button or on an “iconified” window (window reduced to an icon) to display the Window menu. Drag and release the pointer on the selected function:

Restore

Re-opens an iconified window.

Move

Changes the window to a wire frame. Drag the mouse to reposition the window.

Size

Allows you to resize the window. Move the mouse to the desired location on the screen, then click to set the size at that point.

Minimize

Minimizes the window, and displays the icon at the bottom of the screen.

Maximize

Enlarges the window to full screen size.

Occupy Workspace

Based on the number of workspaces established, in the CDE (Cmmon Desktop Environment) Front Panel, you may use this to assign an active menu or application to one or more workspaces.

Occupy All Workspaces

Allows you to assign an active menu or application to all established workspaces.

Unoccupy Workspace

Allows you to remove an active menu or application from an established workspace.

Lower

Shuffles (moves) the window down under all other open windows.

Close

Exits the window. (Does not minimize the window.)

Using the Workspace Menu

Click the right mouse button on the `root` window (the background area of the screen) to display the **Control** menu. Drag and release the pointer on the selected function:

Show Graphical Workspace Manager

Displays in a graphical format the applications running in each workspace. You may drag and drop an application from one workspace to another.

Application List

Displays a list of all applications on all workspaces of the desktop.

Shuffle Up

Shuffles (moves) one of the lower windows to the top.

Shuffle Down

Shuffles (moves) the top window to the bottom.

Refresh

Redraws the entire screen.

Minimize/Restore Front Panel

Minimizes and restores the **Front Panel** of the CDE (Common Desktop Environment).

Restart Workspace Manager

Restarts the window manager and re-reads configuration files.

Logout

Closes all windows, re-initializes the window software, and displays the **Login** screen.

Using the Programs Menu

Click the middle mouse button on the root window (the background area of the screen) to display the **Program** menu. Drag and release the pointer on the selected function:

CMenu

Starts the CMenu program.

DPC

Starts the utility which monitors status, such as the flags set on a micro.

Format Diskette

Formats a diskette.

Tail Current Log

Displays the last ten transactions logged in the system log and continues to scroll new entries as they are logged to the file.

Archive Dates

Displays the number of records that have rolled over from the history files (badge, operator, and alarm) into the temporary files. The earliest and latest dates and times of each are also displayed.

History Dates

Displays the number of records in each history table (badge, operator and alarm) along with the earliest and latest dates and times of each current history table.

Using the Clients Menu

Click the left mouse button on the root window (the background area of the screen) to display the **Client** menu. Drag and release the pointer on the selected function:

New Window

Opens a system window if your operator permission allows it.

Change Active Facility Set

Displays the Facility Set Manager from which you may change or select facilities for the session.

Calculator

Displays the calculator.

Digital Clock

Displays the digital clock. (On an X-Terminal, use Alt + F4 to close the clock.)

Analog Clock

Displays the analog clock. (On an X-Terminal, use Alt + F4 to close the clock.)

Change Password

Displays the **Password** form used to change your password.

NOTE

Operators without System Administration permissions use the password function on the **Client** menu because the **Operators** icon does not appear on their **Control** menu. (The **Operators** form has the **Change Password** function, which is only available to operators with System Administration permissions.)

Reload Menu

Displays the **Main Menu**. Use the reload function if the **Main Menu** is closed.

Stopping Picture Perfect

➤ **To shut down the Picture Perfect application.**

1. Log in as `root` at the console terminal.
2. Make sure no one is logged on as an operator. You can do this by typing `who -H` Enter.
3. Type `rc.pperf -k` Enter
4. Verify that Picture Perfect is stopped. See "Verify that Picture Perfect is Stopped or Running" on page 3.22.

Starting Picture Perfect

Use the following command sequence to start the Picture Perfect application. The third step, which is a command to stop Picture Perfect**,** is used to verify that Picture Perfect is not running so that you do not start another process for Picture Perfect.

➤ **To start Picture Perfect:**

1. Log in as `root` at the console terminal.
2. Make sure no one is logged on as an operator.
3. Type `rc.pperf -k`
4. Verify that Picture Perfect has stopped. See "Verify that Picture Perfect is Stopped or Running" on page 3.22.

5. Type **rc.pperf**

6. Verify that Picture Perfect is running. See "Verify that Picture Perfect is Stopped or Running" on page 3.22.

Verify that Picture Perfect is Stopped or Running

- Verify that Picture Perfect has stopped or started by typing: **ipcs**
  If INFORMIX and TPS are running, the output would appear similar to the following (first AIX is shown, followed by Linux):

NOTE

TPS is recognized by the KEY ending in 400 for shared memory and 401 for semaphore. For example: 0x00000400 and 0x00000401.

AIX

```
IPC status from /dev/mem as of Tue Mar 25 13:47:29 EST 1997
T   ID     KEY                MODE       OWNER    GROUP

Message Queues:

q   24576 0x00000401  -Rrw-rw-rw-    root     system
q   24577 0x00000402  -Rrw-rw-rw-    root     system
q   24578 0x00000403  --rw-rw-rw-    root     system
q   24579 0x00000404  --rw-rw-rw-    root     system
q   24580 0x00000405  -Rrw-rw-rw-    root     system
q   24581 0x00000406  -Rrw-rw-rw-    root     system
q   24582 0x00000407  --rw-rw-rw-    root     system
q   24583 0x0000040a  --rw-rw-rw-    root     system
q   24584 0x0000040b  -Rrw-rw-rw-    root     system
q   24585 0x0000040c  -Rrw-rw-rw-    root     system
q   24586 0x0000040d  -Rrw-rw-rw-    root     system
q   24587 0x0000040e  -Rrw-rw-rw-    root     system
q   24588 0x0000040f  --rw-rw-rw-    root     system
q   24589 0x00000410  -Rrw-rw-rw-    root     system
q   24590 0x00000411  --rw-rw-rw-    root     system
q   24591 0x00000412  -Rrw-rw-rw-    root     system
q   24592 0x00000413  -Rrw-rw-rw-    root     system
q   16401 0x4107001c  -Rrw-rw----    root     printq
Shared Memory:
m   28672 0x52564801  --rw-rw----    informix informix
m   24577 0x00000400  --rw-rw-rw-    root     system
m   2     0x0d05f0fd  --rw-rw-rw-    root     system
m   57347 0x00abacab  --rw-rw-rw-    root     system
Semaphores:
s   0     0x710588c6  --ra-ra-ra-    root     system
s   32769 0x52564801  --ra-ra----    informix informix
s   2     0x6205f0b0  --ra-r--r--    root     system
s   28675 0x52564802  --ra-ra----    informix informix
```

```
s  28676 0x52564803  --ra-ra----    informix informix
s  24581 0x00000401  --ra-ra-ra-    root     system
s  6     0x0105f042  --ra-------    root     system
s  7     0x03141592  --ra-ra----    root     system
s  3031120x00abacab  --ra-ra-ra-    root     system
s  57353 0x00abacac  --ra-ra-ra-    root     system
s  57354 0x00abacad  --ra-ra-ra-    root     system
s  57355 0x00abacae  --ra-ra-ra-    root     system
s  57356 0x00abacaf  --ra-ra-ra-    root     system
```

Linux

```
------------ Shared Memory Segments --------
key         shmid    owner perms bytes    nattch   status

0x00000000  0        root  600   1056768      9     dest
0x00000000  7110657  root  600   520192       9     dest
0x00000000  7143426  root  600   33554432     9     dest
0x00000000  131075   apache600   46084        9     dest
0x52564801  6881284  root  660   33554432     6
0x52564802  6914053  root  660   33554432     6
0x52564803  6946822  root  660   33554432     6
0x52564804  6979591  root  660   30400512     6
0x52564805  7012360  root  660   33554432     6
0x52564806  7045129  root  660   33554432     6
0x00000000  6848522  root  666   16384000     1     dest
0x00000400  7077899  root  666   16384000     25

------ Semaphore Arrays --------
key         semid    owner       perms    nsems    status

0x00000000  327680   apache      600      1
0x00000000  262145   root        660      7
0x00000401  294914   root        666      18

------ Message Queues --------
key         msqid    owner       perms used-bytes
messages

0x00000401  1245184  root        666   0          0
0x00000402  1277953  root        666   0          0
0x00000403  1310722  root        666   0          0
0x00000404  1343491  root        666   0          0
0x00000405  1376260  root        666   0          0
0x00000406  1409029  root        666   0          0
0x00000407  1441798  root        666   0          0
0x0000040a  1474567  root        666   0          0
0x0000040b  1507336  root        666   0          0
0x0000040c  1540105  root        666   0          0
0x0000040d  1572874  root        666   0          0
0x0000040e  1605643  root        666   0          0
0x0000040f  1638412  root        666   0          0
0x00000410  1671181  root        666   0          0
```

```
0x00000411  1703950  root        666   0           0
0x00000411  1736719  root        666   0           0
0x00000413  1769488  root        666   0           0
0x00000414  1802257  root        666   0           0
0x00000415  1835026  root        666   0           0
```

When Picture Perfect is not running there should be no Message Queues, Shared Memory, and Semaphores for TPS or INFORMIX. If there are entries, then Shared Memory is corrupted.

Shutting Down the Entire System

Software or hardware maintenance on the Picture Perfect system may require a complete system shutdown. If this is necessary, perform the following command sequence.

➤ **To shut down the entire system:**

1. Log in as **`root`** at the console terminal.

2. Make sure no one is logged on as an operator.

AIX

3. Type**: `shutdown -Fh now`** or

Linux

4. Type: **`shutdown -h now`**

NOTE

Type **`shutdown -h`** to halt the system; type **`shutdown -r`** to reboot the system. The shutdown command also stops Picture Perfect before shutting down the system.

Wait until the **`**halt completed**`** (AIX)or **`Power Down`** (Linux) message appears and then power down the computer.

Frequently Used Unix Commands

The following commands are frequently used in both AIX and Linux:

pwd	Present working directory
who	Who is logged on
ps -e	Processor status
ipcs	Shared memory status
rm	Remove file
mv	Move or rename file
more	Page contents of a file
cd	Change directory
ls -l	List contents of current directory
cat	Type contents of file
|	Pipe (Connects two programs)
df	Shows used and free space of file systems
plevel	Shows patch level of Picture Perfect packages

System Setup Procedures

Because the Picture Perfect forms build off of one another, it is important that the setup procedures follow a logical flow. The steps below are listed in the preferred order to make the setup of your system a smooth one.

Table 3-3: System Setup Procedures

#	Task	Menu/Form	Information
1	Terminals	Devices/Terminals	See Chapter 4 - Initial Setup.
2	Modems	Devices/Modems	See Chapter 4 - Initial Setup.
3	Serial Ports	Devices/Ports	See Chapter 4 - Initial Setup.
4	Network Ports	Devices/Network Ports	See Chapter 4 - Initial Setup.
5	Printers	Devices/Printers	See Chapter 4 - Initial Setup.
6	Email	Control/Email	See Chapter 4 - Initial Setup.
7	Routings	Control/Routings	See Chapter 4 - Initial Setup.
8	Badge Formats	Access/Badge Formats	See Chapter 4 - Initial Setup.
9	Parameters	Control/Parameters	See Chapter 4 - Initial Setup.
10	Departments	Access/Departments	See Chapter 4 - Initial Setup.
11	Personnel Type	Access/Personnel Type	See Chapter 4 - Initial Setup.
12	Facility	Access/Facility	See Chapter 5 - Facilities and Facility Profiles.
13	Facility Profile	Control/Facility Profile	See Chapter 5 - Facilities and Facility Profiles.
14	Permission Groups	Control/PermGroup	See Chapter 6 - Permissions and Operators.
15	Permissions	Control/Permissions	See Chapter 6 - Permissions and Operators.
16	Operators	Control/Operators	See Chapter 6 - Permissions and Operators.
17	Route Definitions	Control/Route Definitions	See Chapter 7 - Alarm/Activity Monitor Routing.
18	Route Points	Control/Route Points	See Chapter 7 - Alarm/Activity Monitor Routing.
19	Alarm Instructions	Messages/Messages	See Chapter 8 - Alarm Activity Messages and Alarms.
20	Alarm Responses	Messages/Responses	See Chapter 8 - Alarm Activity Messages and Alarms.
21	Alarms	Devices/Alarms	See Chapter 8 - Alarm Activity Messages and Alarms.
22	Alarm Color	Control/Alarm Color	See Chapter 8 - Alarm Activity Messages and Alarms.
23	Output Groups	Devices/OutGroups	See Chapter 9 - Input and Output Groups.
24	Input Groups	Devices/InGroups	See Chapter 9 - Input and Output Groups.

#	Task	Menu/Form	Information
25	Micros	Devices/Micros	See Chapter 10 - Micros.
26	Data Encryption	Control/Keys	See Chapter 10 - Micros.
27	Flashing Micros	eFlash, MicTool, or Micro Flash Utility	See Chapter 11 - Flashing Micros.
28	Outputs	Devices/Outputs	See Chapter 12 - Inputs and Outputs.
29	Inputs	Devices/Inputs	See Chapter 12 - Inputs and Outputs.
30	Categories	Access/Categories	See Chapter 13 - Categories, Areas, Readers, and Doors.
31	Areas	Access/Areas	See Chapter 13 - Categories, Areas, Readers, and Doors.
32	Readers	Devices/Readers	See Chapter 13 - Categories, Areas, Readers, and Doors.
33	Doors	Devices/Doors	See Chapter 13 - Categories, Areas, Readers, and Doors.
34	Badges	Access/Badges	See Chapter 14 - Badges.
35	Data Generator	Control/Generator	See Chapter 15 - Generator.
36	Mode Creation	Schedule/Mode Creation	See Chapter 16 - Schedules and Modes.
37	Mode Command	Control/Mode Command	See Chapter 16 - Schedules and Modes.
38	Mode Events	Schedule/Mode Events	See Chapter 16 - Schedules and Modes.
39	Area Events	Schedule/Area Events	See Chapter 16 - Schedules and Modes.
40	Reader Events	Schedule/Reader Events	See Chapter 16 - Schedules and Modes.
41	Door Events	Schedule/Door Events	See Chapter 16 - Schedules and Modes.
42	Alarm Events	Schedule/Alarm Events	See Chapter 16 - Schedules and Modes.
43	Input-Group Events	Schedule/InGroups Events	See Chapter 16 - Schedules and Modes.
44	Output-Group Events	Schedule/OutGroups Events	See Chapter 16 - Schedules and Modes.
45	Backup Events	Schedule/Backup Events	See Chapter 18 - Backup and Restore.
46	Report Events	Schedule/Reports Events	See Chapter 19 - History Reports.
47	User Customization	User Cutomization Utility	See Chapter 31 - User Customization.

NOTES

Initial Setup

Chapter 4

Overview

Initial setup defines the system hardware configuration, as well as message routing and department information.

Your installation may include direct, dial-up, and/or network micros. Ports for direct communication and ports for dial-up communication are user-defined and configured on the **Ports** form. Ports for network communication are user-defined and configured on the **Network Micro Ports** form. The port on the host used for dial-up micros requires an attached modem and a phone number. The dial-up micro requires an attached modem, user-defined on the **Modems** form. Direct and network micros require a port assignment (see Chapter 10 - Micros).

Printer ports have already been configured in the Picture Perfect installation procedure. The user must set up the printer queue on the **Printers** form.

Prerequisites

Your installer completes the initial hardware and software installation. The Picture Perfect software provides forms that you fill out to fit your configuration. Some of the forms contain default information that you can change as required.

What You Will Be Doing

This chapter shows you how to define modems, ports, network ports, printers, routings, terminals, system parameters, departments, and micro communication lines.

A physical printer was configured (with an adapter and port specified) during the Picture Perfect installation, so all you need to provide is a printer description and printer queue. For example, the adapter for a parallel printer is a Standard I/O Parallel Port Adapter. The adapter port for a serial printer may be one of two standard serial ports or one of the ports on the multi-port adapter.

Many of the port characteristics for micro communication lines are already configured at the time of installation, so all you need to provide is a port description, tty number, and line settings. If the port supports dial-up micros, you specify a phone number and modem type. If your system uses

dial-up communications, see “Modems” on page 4.4 for configuring modem types for assignment to host and micro ports. If this is a network port, you will need to complete the **Network Micro Ports** form. See “Ports” on page 4.10 for more information.

Terminals

The `aa` utility can be used to configure each workstation with a unique name and Internet address, such as:

```
192.9.200.10     ws1
```

Use the **Terminals** form (Figure 4-1) to configure all workstations used by Picture Perfect.

Setup

➤ **To define a terminal record:**

1. Select **Devices**, then **Terminals**.
2. Complete the **Terminals** form. For a description of each field, see Figure 4-1.
3. Click **Save**.

The Terminals Form

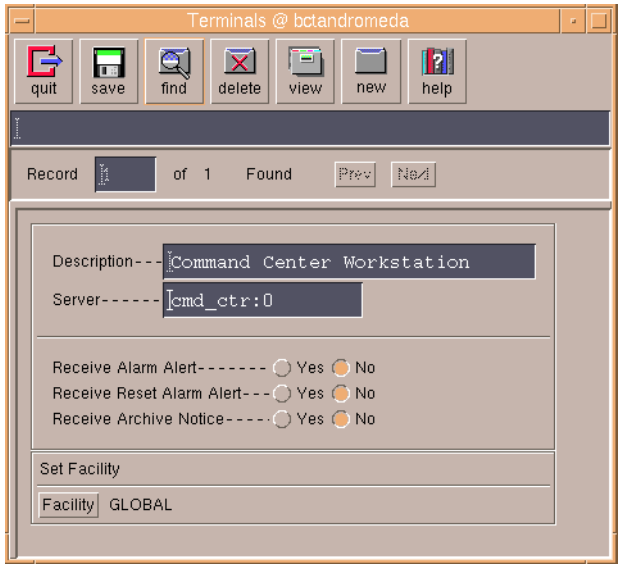


Figure 4-1. Terminals Form

Description

Type any alphanumeric combination (1 to 30 alphanumeric characters) for **Description**. For example, **`Command Center Workstation`**.

Server

In the **Server** field, type the hostname defined during installation in the file **`/etc/hosts`** and append it with "**`:0`**" (*zero*, not the letter *O*). The hostname can be a maximum of eight alphanumeric characters. For example, if **`cmd_ctr`** is the workstation's name in **`/etc/hosts`**, the **Server** field would read "**`cmd_ctr:0`**". The **Server** field must be typed in lower-case characters.

NOTE If using a graphical terminal attached to the server, in the **Server** field type: **`unix:0`**

Receive Alarm Alert

Use the radio buttons to specify whether or not this terminal is to receive **Alarm Alert** messages.

Receive Reset Alarm Alert

Use the radio buttons to specify whether or not this terminal is to receive **Reset Alarm Alert** messages.

Receive Archive Notice

Use the radio buttons to specify whether or not this terminal is to receive **Archive Notice** messages.

Optional Package

If you have optional packages installed, such as Guard Tours or Client Workstation (for example, an Access Vision client), use the applicable radio buttons to specify whether or not this terminal is to receive messages relating to that package.

Set Facility

Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

Modems

Use the **Modems** form to describe each modem type that you intend to use for dial-up communications. Modem types that you define using the **Modems** form appear in a picklist for assignment to a micro (on the **Micros** form) and a port (on the **Ports** form). A micro can dial up the host on any available port that is compatible (meaning the modem type matches). The micro recognizes the Hayes SmartModem 9600 baud or a 100% Hayes SmartModem-compatible modem. Only compatible modem types can establish a connection.

NOTE

The Micro/5-P supports 2400 baud only and the Micro/5-PX supports 9600 baud only.

A dial-up micro uses standard modem communications and standard telephone lines to dial up and respond to the host. Each dial-up micro has a dedicated phone line and a modem for communication with the host. The modem connects using RS-232 cable at the micro's host port (RS-232 serial port).

Set the micro switches for modem type to Hayes compatible and baud to 2400 or 9600 depending on the micro type (refer to your micro manual for the switch block settings).

For a Micro/5, we recommend that the phone number be configured ("hard-coded") into the modem so that a dial-up micro has a number for dialing the host after the micro resets. For the Micro/5-PX, use the Flash utility, which is part of the Micro Installation Tool (MICTOOL), Version 1.103 or higher, to enter the phone number into the micro's parameter block.

The host has a list of user-definable phone numbers available for calling any dial-up micro in the system; likewise, all dial-up micros have a list of user-definable phone numbers available for dialing the host. In addition, each dial-up micro has the option of a hard-coded phone number in the attached modem or parameter block. To allow for micros located in a PBX or in another country, there is a user-definable dial-out prefix assigned to the micro.

For details about the events that may initiate micro-to-host and host-to-micro calls, see "Example of Direct Communication - Bi-directional Micros" on page 10.4.

NOTE

Each time a micro makes a call, it chooses a different number from this list, which reduces competition between micros trying to call the host at the same number.

The host can also download the micro's local badge database which reduces the number of micro-to-host calls required for learning a badge. The maximum connect time is one hour on an initial reset.

Setup

➤ **To add a modem to the host machine:**

1. Select **Devices**, then **Modems**.
2. Complete the **Modems** form. For details on each field, see "The Modems Form" below. To determine the required operating parameters for a modem, refer to the user manual published by the manufacturer or associated documentation provided by GE Interlogix.

NOTE

There are completed **Modems** forms for the Hayes 1200, 2400 and 9600 modems, Cardinal 28.8 V.34 modem, and STAR Comm 144F.1 modem supplied.

3. Click **Save**.

The Modems Form

The **Modems** form supports dynamic configuration. This means that you can configure modems without having to restart the Picture Perfect system.

Refer to Figure 4-2 and Figure 4-3 for the **Modems** form.

The following is a list of fields that may require additional information for you to complete. The list is in the order that the fields appear on the form. There is no required sequence for you to follow. An asterisk (*) in front of a field indicates that you must refer to your modem manual for the required command string, message, or value. If a default value appears in a field, you can accept that value if the modem type is Hayes-compatible.

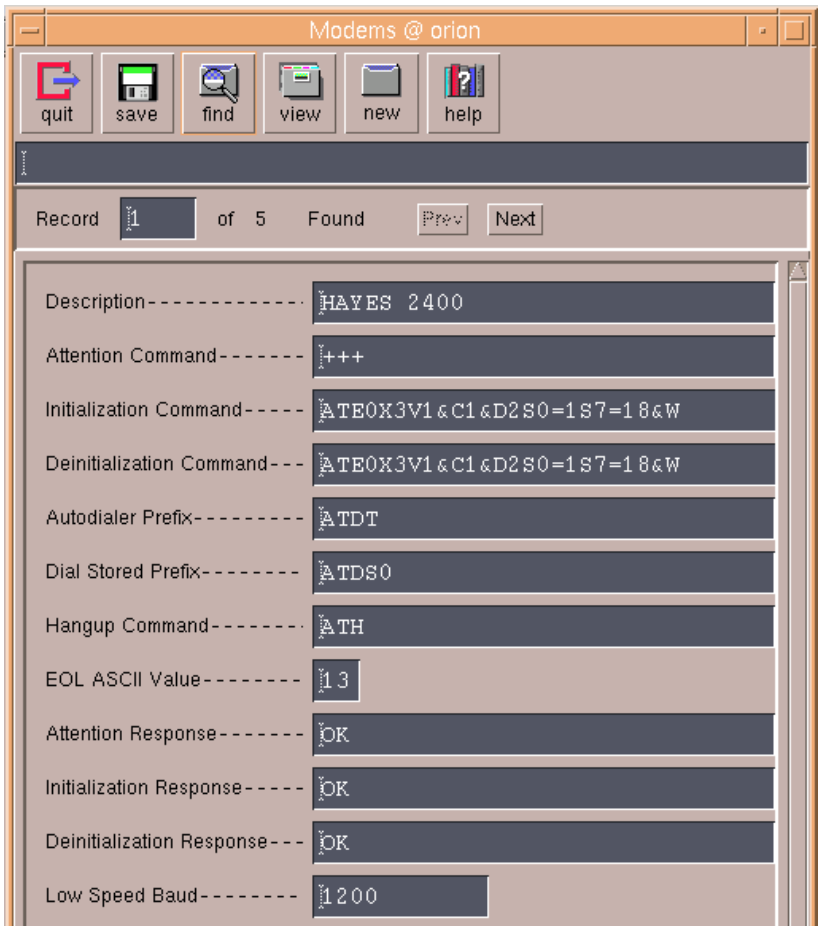


Figure 4-2. Modems Form (Top)

Description

Type a modem description up to 30 alphanumeric characters long that specifies the modem type. For example, Hayes 2400. This modem description will appear in a picklist on the **Micros** form and the **Ports** form so that you can assign a modem type to micros and ports.

***Attention Command**

Enter the wake-up string (0 to 30 alphanumeric characters) required for the modem to put it into command mode, so that it can receive other configuration commands (and eventually the hang-up command).

***Initialization Command**

Enter the command string (0 to 30 alphanumeric characters) used when preparing to dial out or answer.

***Deinitialization Command**

Enter the command string (0 to 30 alphanumeric characters) used to de-initialize the modem when hanging up.

***Autodialer Prefix**

Enter the command string (0 to 30 alphanumeric characters) used to tell the modem to dial the number that follows.

***Dial Stored Prefix**

Enter the command string (0 to 30 alphanumeric characters) that tells the modem to dial the phone number stored in the modem's non-volatile memory.

NOTE

Some modems can store phone numbers at multiple memory locations. On your modem, location 0 is not available for stored phone numbers because it is reserved for the host phone number.

***Hangup Command**

Enter the command string (0 to 30 alphanumeric characters) used to disconnect or hang up the modem.

***EOL ASCII Value**

Enter the character (expressed in ASCII value) that terminates every command string.

***Attention Response**

Enter the string (0 to 30 alphanumeric characters) that the modem returns to indicate that it received the attention command.

***Initialization Response**

Enter the string (0 to 30 alphanumeric characters) that the modem returns to indicate that it received the initialization command.

***Deinitialization Response**

Enter the string (0 to 30 alphanumeric characters) that the modem returns to indicate that it received the de-initialization command.

***Low Speed Baud**

For multi-speed modems, enter the lowest baud rate that this modem can use for a connection. The line speed can downgrade to this lower baud rate to accommodate older modems or poor line quality.

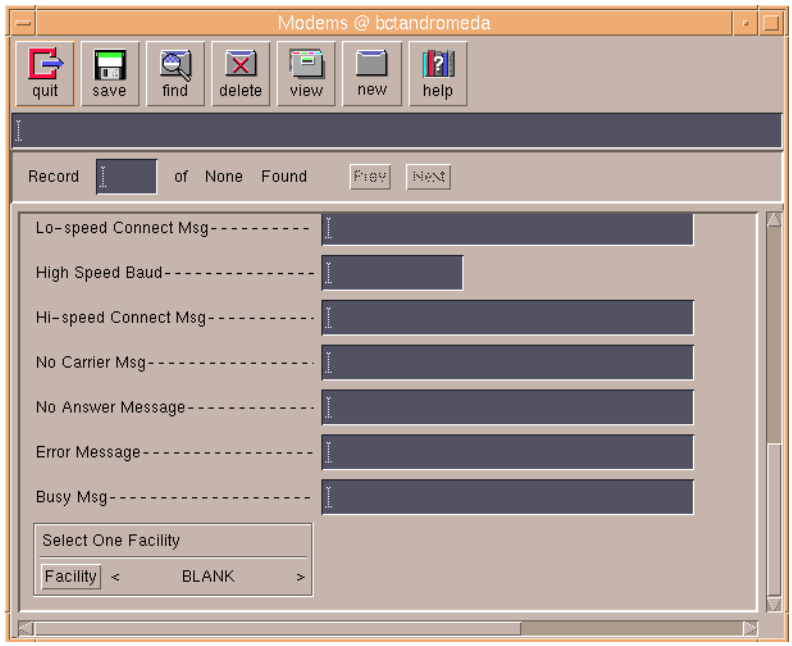


Figure 4-3. Modems Form (Bottom)

***Lo-speed Connect Msg**

Enter the message (0 to 30 alphanumeric characters) that the modem returns when it connects using its low-speed baud rate.

***High Speed Baud**

For multi-speed modems, enter the highest baud rate that this modem can use for a connection. The modem uses its highest baud rate when it first tries to connect. If it does not receive a carrier using the high-speed baud rate, it steps down to lower baud rates until the connection occurs.

***Hi-speed Connect Msg**

Enter the message (0 to 30 alphanumeric characters) that this modem returns when it connects using its high-speed baud rate.

***No Carrier Msg**

Enter the message (0 to 30 alphanumeric characters) that this modem gives when it fails to connect; this message differentiates between **No Carrier**, **No Answer**, and **Busy**.

***No Answer Message**

Enter the message (0 to 30 alphanumeric characters) that this modem gives when it fails to connect; this message differentiates between **No Carrier** and **No Answer**.

***Error Message**

Enter the message (0 to 30 alphanumeric characters) that this modem gives when it rejects an invalid command.

***Busy Msg**

Enter the message (0 to 30 alphanumeric characters) that this modem gives when it fails to connect; this message differentiates between **No Carrier** and **Busy**.

Select One Facility

Facility

Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

Ports

Use the **Ports** form to define a serial port and the **Network Micro Ports** form to define a network port. The system then allows you to assign the device port (line) to a micro.

Uni-directional direct-connection micros require only a primary port; bi-directional direct-connection micros require both a primary and a secondary port. Dial-up micros do not require a port assignment, but do require a **Ports** form as designated below. Network micros require only a network primary port.

See "Configuring Micro Communications" on page 10.3 of Chapter 10 - Micros. Refer to Figure 4-4 below for micro connections.

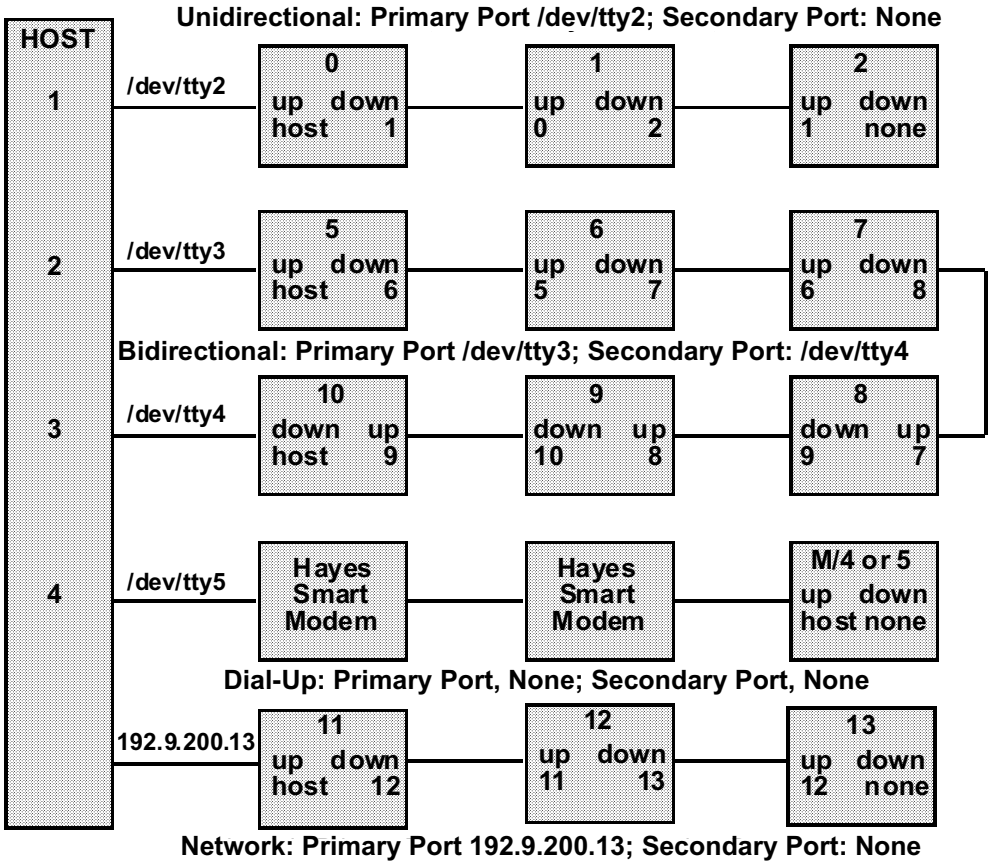


Figure 4-4. Sample AIX Connection Diagram for Micros Setup

Setup

➤ **To set up a serial micro communication line:**

Perform the following steps to configure a communication line. To change an existing configuration, display the desired record, then follow the same steps to select new settings in the configuration screen.

1. Select **Devices**, then **Ports**.
2. Use the **Ports** form to configure each port. Unless your installation has dial-up micros, select **None** for **Modem Type** and do not enter a phone number. See "The Ports Form" on page 4.11 for a description of each field.
3. Click **Save**.

➤ **To set up a network micro communication line:**

Perform the following steps to configure a communication line. To change an existing configuration, display the desired record, then follow the same steps to select new settings in the configuration screen.

1. Select **Devices**, then **Network Micro Ports**.
2. Use the **Network Micro Ports** form to configure each port. Simply enter a description for the port and either the IP address or the host name of the network micro. See "The Network Micro Ports Form" on page 4.16 for a description of each field.
3. Click **Save**.

The Ports Form

The **Ports** form supports dynamic configuration for all fields on this form except tty. Dynamic configuration means that you can configure ports without having to restart the Picture Perfect system. If you change the tty name, you must restart Picture Perfect.

Refer to Figure 4-5 for the **Ports** form.

The following is a list of fields that may require additional information for you to complete. The list is in the order that the fields appear on the form. There is no required sequence to follow.

NOTE An asterisk (*) indicates fields required only for dial-up communications.

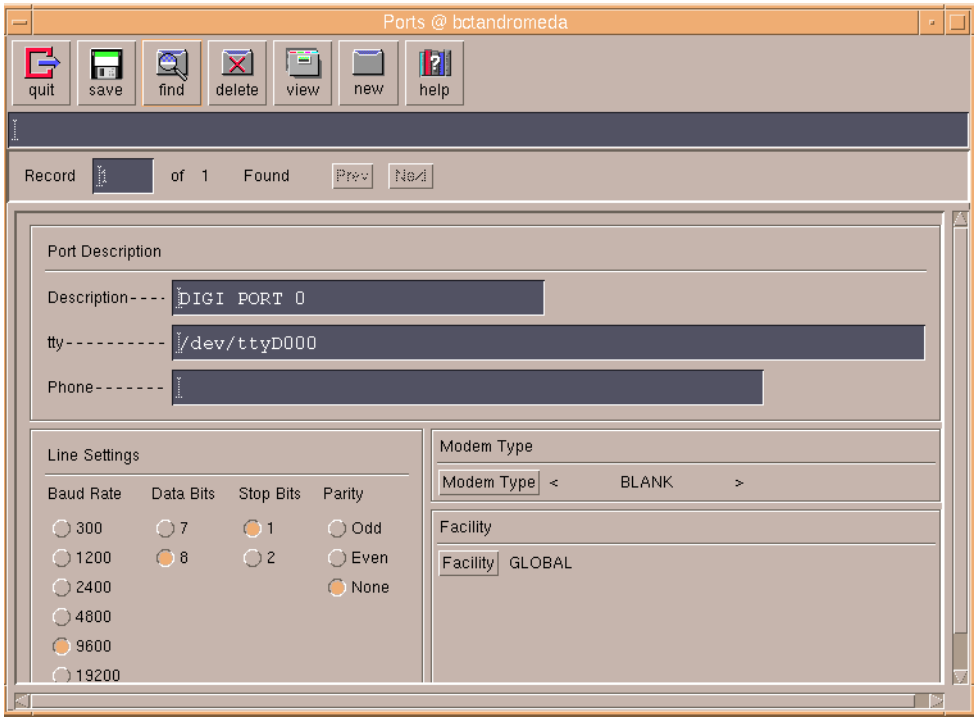


Figure 4-5. Ports Form

Description

Type a port description. The ports that you define appear in a picklist on the **Micros** form so that you can assign a serial port to direct-communication micros (unidirectional or bidirectional). (None appears in the picklist so that you can indicate no secondary port for a unidirectional micro and no primary or secondary port for a dial-up micro.)

A typical description of a host port includes the line number and the port number; for example, **`Line 1 Port 1 tty2`**. There are two serial ports on the host, and additional serial ports are available if a multi-port adapter is attached.

NOTE

Serial port (S1) on the RISC/6000 is used by the system console in the case of a non-graphical console.

A line of unidirectional micros requires one communications channel and one tty (RS-232) port at the host. A line of bidirectional micros requires two channels (a primary communications line and a

secondary communications line) and two tty (RS-232) host ports (primary and secondary).

tty

AIX

For RS/6000 systems, type the full path name of the port as defined in AIX, such as **`/dev/ttyN`**, where **`N`**=line number. This must be typed in lower-case characters, and must not be the port assigned to the operator's console. (Typically, tty0 is assigned to an ASCII console.)

Linux

For Linux systems, refer to Table 4-1 through Table 4-3 for **Port Device Names** for Linux systems.

Table 4-1: COM Port Device Names for Linux Systems

Type	Port	Direct and Dial-up Name
com port	com1	/dev/ttyS0
	com2	/dev/ttyS1

Table 4-2: PCI 8 Port Serial Port Adapter Port Device Names for Linux Systems

Type	Port	Direct and Dial-up Name
PCI 8 port Digi board	1	/dev/ttyD000
	2	/dev/ttyD001
	3	/dev/ttyD002
	4	/dev/ttyD003
	5	/dev/ttyD004
	6	/dev/ttyD005
	7	/dev/ttyD006
	8	/dev/ttyD007

Table 4-3: PCI 16 Port Serial Port Adapter Port Device Names for Linux Systems

Type	Port	Direct and Dial-up Name
PCI 16 port Digi board For additional Digi boards, continue with device names as follows: Board 2: /dev/tty/D016 to /dev/tty/D031 Board 3: /dev/tty/D032 to /dev/tty/D047 Board 4: /dev/tty/D048 to /dev/tty/D063	1	/dev/ttyD000
	2	/dev/ttyD001
	3	/dev/ttyD002
	4	/dev/ttyD003
	5	/dev/ttyD004
	6	/dev/ttyD005
	7	/dev/ttyD006
	8	/dev/ttyD007
	9	/dev/ttyD008
	10	/dev/ttyD009
	11	/dev/ttyD010
	12	/dev/ttyD011
	13	/dev/ttyD012
	14	/dev/ttyD013
	15	/dev/ttyD014
	16	/dev/ttyD015

***Phone**

The dial-up (micro-to-host) telephone number. Include the area code but not the PBX prefix or country code. A dial-up micro can use this number to dial the host.

A dial-up micro uses a dynamic list of phone numbers to call the host on any compatible port that is available. When the port is assigned the same modem type as the micro, that port becomes compatible.

A port used for direct-communication micros does not require a phone number. (Leave this field blank for direct-connection micros.) The port used for dial-up communications requires a phone number.

NOTE If you are configuring a modem port in a Redundant System, please refer to the *Picture Perfect Redundant System Administration Guide* for more information.

Line Settings

Baud Rate:
For direct-communication micros, select the baud rate the desired baud rate. For dial-up micros, **2400** is the required line setting for the Micro/5 and **9600** is the required line setting for the Micro/5-PX.

Data Bits:
The required line setting is **8**.

Stop Bits:
The required line setting is **1** unless a Star COMM modem is attached to this port. Consult the CASI documentation associated with the Star COMM modem for its setting.

Parity:
The required line setting is **None**.

*Modem Type

A port used for direct-communication micros does not require a modem type (select **None**). **None** is the default selection. If modems are connected, click the **Modem Type** button to display a picklist of modems. Select the modem type that matches your modem, then click **Close**. For information on setting up modems, see "Modems" on page 4.4. For information on DIP switch settings, see the appropriate Installation Guide.

Facility

Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

The Network Micro Ports Form

The **Network Micro Ports** form supports dynamic configuration. This means that you can configure network micros without having to restart the Picture Perfect system.

Refer to Figure 4-6 for the **Network Micro Ports** form.

Setup

➤ **To define a network ports record:**

1. Select **Devices**, then **Network Ports**.
2. Complete the **Network Ports** form. For a description of each field, see "The Network Ports Form" on page 4.16.
3. Click **Save**.

The Network Ports Form

The following is a list of fields that may require additional information for you to complete. The list is in the order that the fields appear on the form. There is no required sequence for you to follow.

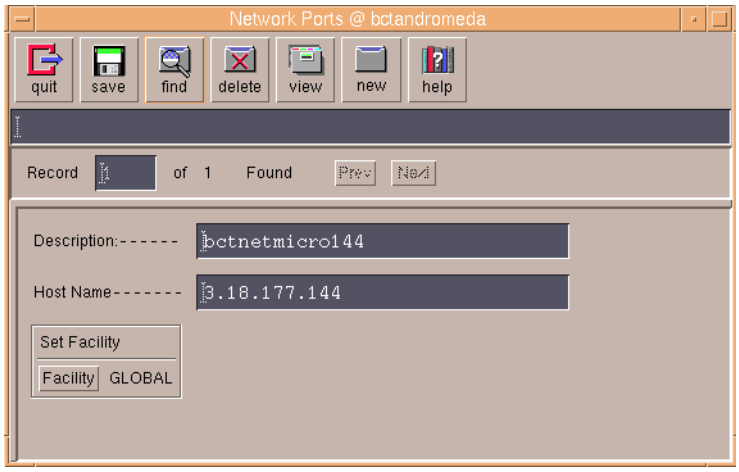


Figure 4-6. Network Micro Ports Form

Description

Type a port description. The ports that you define here will appear in a picklist on the **Micros** form so that you can assign a network port to network micros. (**None** will automatically appear in the picklist so that you can indicate no secondary port.)

A typical description of a network micro port should allow an operator to identify it on the ports picklist on the **Micros** form. It should also allow the operator to distinguish it from a serial port; for example, **Network Micro 0 Port**.

Host Name

Type the host name of the network micro. The host name of the network micro must be resolved by (listed in) the **`/etc/hosts`** file or a Domain Name Server (DNS). This can be either the IP address or the name.

Set Facility

Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

NOTE

FOR FIREWALL USERS: If your installation requires ANY micro and its corresponding host to communicate through a firewall, the firewall must be configured to allow for connections through the following range of ports: 6767-7800. See also Appendix C - Firewall Configuration

Currently the following ports have been designated for use:

Table 4-4: Firewall Port Configuration

Port	Name	Description
6767	Application	Normal operation data port between micro and host.
6768	Key	Port for exchanging DES key information.
6868	Reserved	Future use port. See Appendix C - Firewall Configuration.
7777	Reserved	Future use port. See Appendix C - Firewall Configuration.

The following products use these ports: Mictool, Picture Perfect and M/5PX-Network.

Printers

Use the **Printers** form (Figure 4-7) to add each printer configured during installation.

Setup

➤ **To define a printer record:**

1. Select **Devices**, then **Printers**.
2. Complete the **Printers** form. For a description of each field, see "The Routings Form" on page 4.21.
3. Click **Save**.

The Printers Form

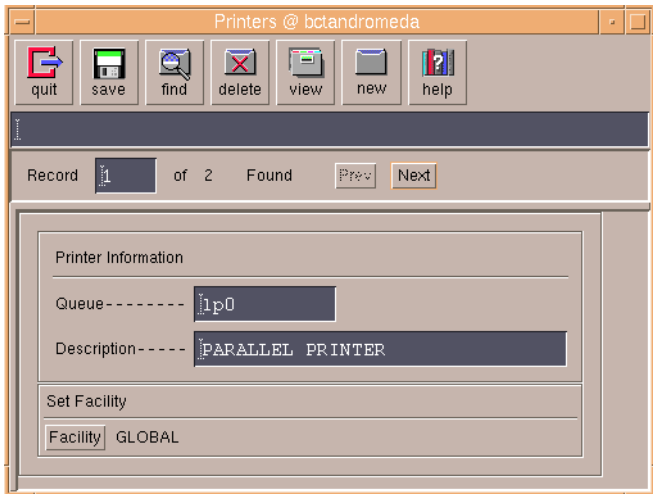


Figure 4-7. Printers Form

Queue

This is the print queue specified when printers were configured during the installation of Picture Perfect or anytime a printer is added.

Description

A description of the printer, including type, quality, location, etc. as required (up to 30 alphanumeric characters).

Set Facility

Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those

records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

Email

Use the **Email** form (Figure 4-8) to add e-mail addresses within the system for the routing of alarms.

When an alarm is generated, a message will be e-mailed to the address listed in the **Email Address** field. Each time an alarm is set or reset, another message will be sent.

NOTE

In order for the **Email** feature to work properly, the **Sendmail** subsystem must be properly configured. See your System Administrator or your IS department for assistance.

Setup

➤ **To define an Email record:**

1. Select **Control**, then **Email**.
2. Complete the **Email** form. For a description of each field, see "The Routings Form" on page 4.21.
3. Click **Save**.

➤ **To set up an alias:**

1. Open a new terminal window.
2. Change to the **`root`** user by typing: **`su`** Enter
3. Using an editor, such as **`vi`**, add the new alias to the **`/etc/aliases`** file. Each alias must be unique and must start on a new line. Aliases are in the form:

   ```
   alias: name@somedomain.com, name2@someotherdomain.net
   ```

   For more information, at the command prompt, type: **`man aliases`**

The Email Form

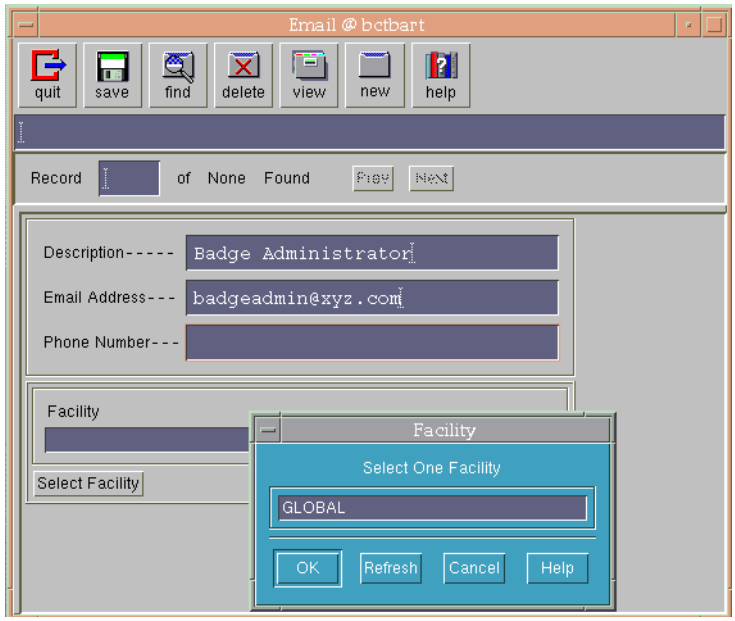


Figure 4-8. Email Form with Facility Picklist

Description

The name of the person to whom the e-mail is to be sent, or a description of the group, if using an alias (up to 30 alphanumeric characters).

Email Address

The e-mail address to which the alarm is to be sent. If you want the alarm message to go to multiple addressees, enter a valid e-mail alias. An alias is used if you wish to have an alarm message go to multiple addressees. Any alarm messages sent to this address will be handled by the Sendmail subsystem and routed to the appropriate e-mail addresses in the e-mail alias.

Phone number

The phone number of the person specified by the e-mail address.

Facility

The facility associated with the person specified by the e-mail address.

Select Facility
Press the **Select Facility** button to display a picklist of facilities.

Routings

Use the **Routings** form (Figure 4-9) to define a routing. There are eight predefined routings already entered. The system lets you use these routings to send messages to a printer, history log, monitor, and / or to e-mail addresses. The routings you create make up a picklist and are assigned to various aspects of the system.

Setup

➤ **To define a routing:**

1. Select **Control**, then **Routings**.
2. Complete the **Routings** form. For a description of each field, see "The Routings Form" on page 4.21.
3. Click **Save**.

The Routings Form

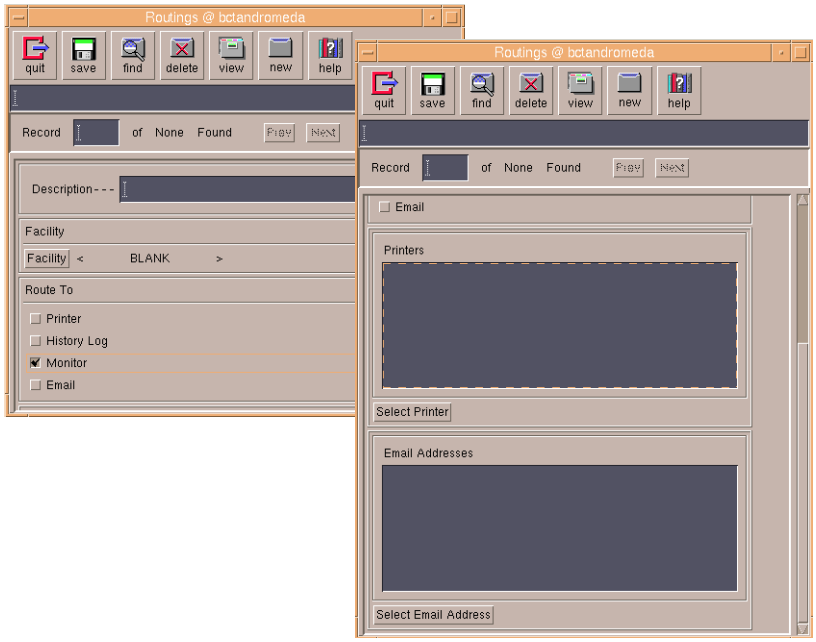


Figure 4-9. Routings Form

Description

Describe the type of messages that will be routed. *For example, Badge Activity*.

Facility

Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

Route To

One or more **Route To** destinations may be selected. A single routing **Description** can include multiple routing **Destinations** as shown in Table 4-5.

Table 4-5: Routing Descriptions and Destinations

Description	Destination
ALL	Printer History Log Monitor Email
BADGE ACTIVITY	History Log Monitor
OPERATOR MESSAGES	History Log
DAYTIME ALARM MESSAGES	History Log Monitor
OVERNIGHT MESSAGES	Printer History Log Monitor

Printer

Select **Printer** to route messages to a printer. Click the **Select Printer** button (at bottom of screen) to display the available printers. Select the desired printers from the picklist, then click **Ok**.

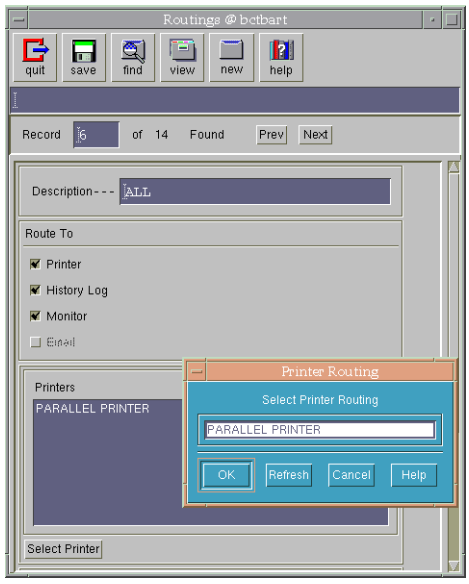


Figure 4-10. Printer Routing

History Log
Select **History Log** to route messages to a history log file.

Monitor
Select **Monitor** to route messages to the Alarm or Activity Monitor. When the **Monitor** routing is selected, the **Email** button is enabled.

Email
Select **Email** to route message to an e-mail address or alias. Click the **Select Email Address** button to display all of the e-mail addresses currently defined in the system. Select the desired addresses from the picklist, then click **Ok.**

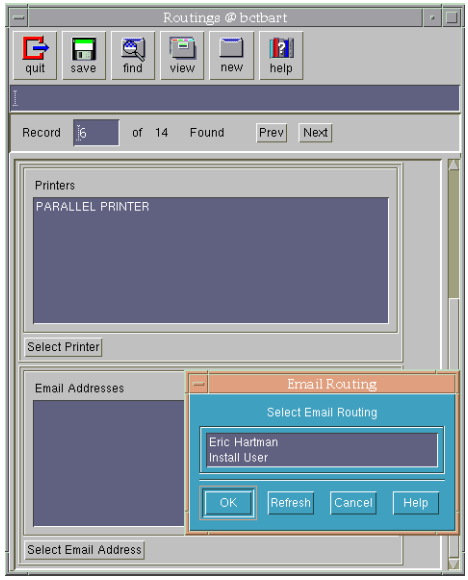


Figure 4-11. E-Mail Routing

Badge Formats

The format of the encoded badge is identified by a special character sequence that optionally starts with constant data and always ends with variable data. It must include a percent sign (%) to mark the beginning of the variable data and a lower-case "**s**" to mark the end. The entire Badge ID must be between 1 and 16 alphanumeric characters long.

Constant data (such as a facility code) is data common to all badges, and will be entered in front of the % in this field. (Constant data does not appear in the **Badge Encode Number** field of the **Badges** form.)

Variable data identifies the length of the character string required in the **Badge Encode Number** field on the **Badges** form. For example, Badge ID format **002%7s** starts with a three-digit facility code, and its variable string indicates seven alphanumeric characters; therefore, its entire character total is 10. Table 4-6 shows other examples.

Table 4-6: Badge ID Formats

Badge ID Format	Explanation	Entire Length
%10s	10-character string of variable data.	10
00%8s	2-character facility code (00) and 8-character string of variable data.	10
0340%8s	4-character facility code (0340) and 8-character string of variable data.	12
1005%6s	4-character facility code (1005) and 6-character string of variable data.	10
%4s	Keypad only.	4

NOTE

RECOMMENDED: To ensure that the *Auto Generate* function produces a unique badge ID number, the variable portion of the Badge ID format must be at least 10 digits.

The system comes with one pre-loaded format, **%10s**, which is the format for 10-digit badges. If additional formats are needed, they can be added on the **Badge Formats** form (Figure 4-12).

Setup

➤ **To define badge formats:**

1. Select **Access**, then **Badge Formats**.
2. Complete the **Badge Formats** form. For a description of each field, see "The Badge Formats Form" on page 4.26.
3. Click **Save**.

The Badge Formats Form

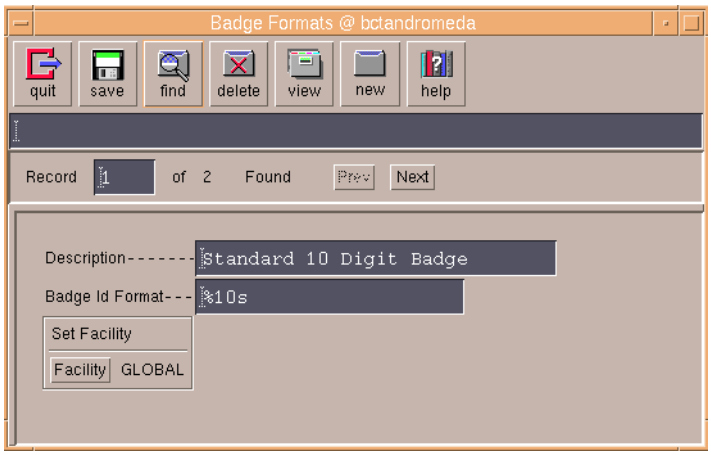


Figure 4-12. Badge Formats Form

Description

A unique description that identifies the badge format.
This field generates a picklist of badge formats that is used in the **Parameters** and **Badges** forms.

Badge Format

A special character sequence that optionally starts with constant data and always ends with variable data. It must include a percent sign (%) to mark the beginning of the variable data and a lower-case "**s**" to mark the end. *For example: %4s*
This field generates a picklist of badge formats that is used in the **Parameters** and **Badges** forms.

Set Facility

Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

Parameters

The **Parameters** form is used to assign system parameters that will be used by the system during the setup procedures. The first eight fields of the **Parameters** form (**Node Name** to **Operator History Size**) are already set, based on the system-installation settings. These should not be changed unless you are directed to do so by your support representative.

Refer to Figure 4-13 for the top portion of the **Parameters** form.

Setup

➤ **To define system parameters:**

1. Select **Control**, then **Parameters**.
2. Complete the **Parameters** form. For a description of each field, see "The Parameters Form" on page 4.27.
3. Click **Save**.

To implement the system parameters you have changed, perform shutdown and restart procedures using the command line (see "Shutting Down the Entire System" and "Starting Picture Perfect" on page 3.21).

The Parameters Form

The following is a list of fields that may require additional information for you to complete. The list is in the order that the fields appear on the form. There is no required sequence for you to follow.

NOTE

Fields marked with an asterisk (*) are parameters that should only be changed as directed by your support representative.

Figure 4-13. Parameters Form (Top)

***Node Name**

Node name of the host (normally set to **NODE 1**).

***Xon Threshold**

The number of queued messages that control TPS message buffering. **Xon** must be smaller than **Xoff**.

***Xoff Threshold**

The number of queued messages that control TPS message buffering. **Xoff** must be larger than **Xon**.

***Shared Memory Size**

The size (KBytes) of shared memory used.

***Diagnostic Buffer Size**

The size (KBytes) of the diagnostic buffer.

Alarm/Badge/Operator History Size

The number of transaction records (alarm, badge, or operator) that can be stored in the history table or backup table. This value is set according to the amount of alarm, badge, or operator activity expected, considering the desired archive frequency. These three fields are grayed out which means that they are read-only fields. These fields are set during installation.

Alarm Monitors

This field is reserved for future use. Default is **2** for the current version.

Diagnostic Monitors

This field is reserved for future use. Default is **1** for the current version.

Event Monitors

This field is reserved for future use. Default is **2** for the current version.

Operator Routing

Define an **Operator Routing** for operator activity. Click the **Operator Routing** button to display a picklist of routings. Select the desired routing, then click **Close**.

Default Routing

Define a **Default Routing** to ensure that all messages (alarm and activity) are routed somewhere. Whenever the routing of a function is unassigned, the system will use this setting as the default. Click the **Default Routing** button to display a picklist of routings. Select the desired routing, then click **Close**.

Card Trace Routing

Define a routing for traced badges. Click the **Card Trace Routing** button to display a picklist of routings. Select the desired routing, then click **Close**. (See Chapter 25 - Badge Trace for details on this feature.)

Refer to Figure 4-14 for the top middle portion of the **Parameters** form.

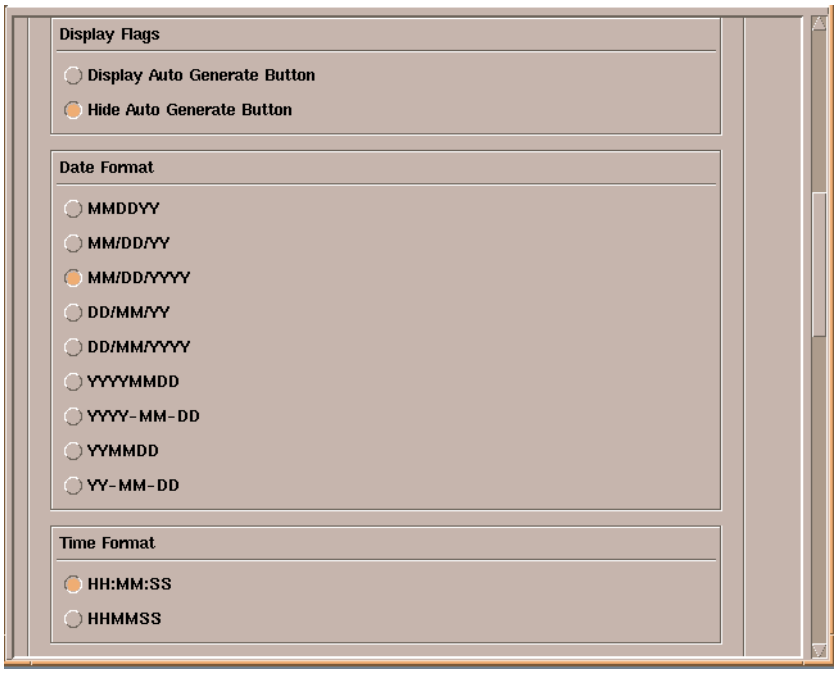


Figure 4-14. Parameters Form (Top Middle)

Display Flags

These radio buttons are used to display or hide the **Auto Generate** button on the **Badges** form.

If your system uses magnetic-stripe readers and you want to use this method to issue badges, select the option to display the **Auto Generate** button. Otherwise, select the option to hide this button. See "Position for Auto-Generate" on page 4.32.

Date Format

Specify the date format of Month (MM), Day (DD), and Year (YY or YYYY) that the system will use.

Click a radio button to select one system date format. For example, the date January 02, 2002 can display in any one of the following formats:

MMDDYY	010202
MM / DD / YY	01 / 02 / 02
MM / DD / YYYY	01 / 02 / 2002
DD / MM / YY	02 / 01 / 02
DD / MM / YYYY	02 / 01 / 2002
YYYYMMDD	20020102
YYYY MM DD	2002 01 02

YYMMDD	020102
YY-MM-DD	02-01-02

Time Format

Specify the way the hour, minutes, and seconds appear in the time of day (HH:MM:SS or HHMMSS). Time displays in military (24-hour) format.

Click a radio button to select the system time format. For example, thirty minutes and 20 seconds after 5 PM can display two different ways:

17:30:20
173020

Even though the system will display time in one format or the other, it should be noted that a time value can be entered in either format. It should also be noted that time values can be entered in abbreviated format. The only abbreviated formats supported for data entry are the following:

SS
MMSS
HH:MM

Refer to Figure 4-15 for the bottom middle portion of the **Parameters** form.

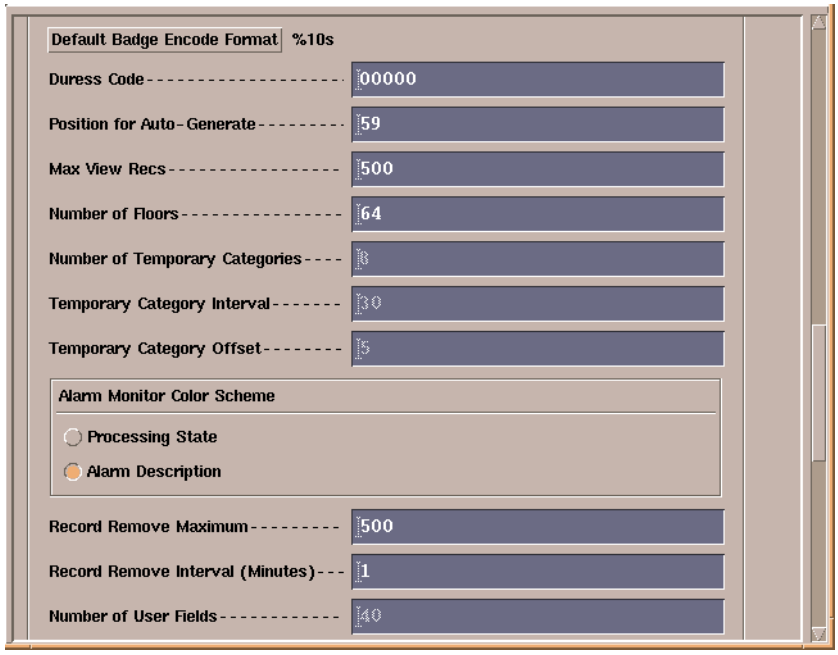


Figure 4-15. Parameters Form (Bottom Middle)

Default Badge Encode Format

This is a required field that represents the default badge encode setting for the system. Click the **Default Badge Encode Format** button and choose a **Badge Encode Format** from the picklist. If the operator does not set a badge encode format on the **Badges** form, this default setting is used.

Duress Code

Enter the PIN number used to signal duress situations.

Position for Auto-Generate

Enter a number between 59 and 62, which represents the **User Field** position (between 1 and 4) that will be used for **Auto-Generation** on the **Badges** form. This number is normally set to 59, which represents **User Field 1**. This means that the information entered into **User Field 1** on the **Badges** form will be used to generate the **Badge Encode Number**.

For details on using the Auto Generate feature, see "Auto-Generate Method" on page 14.3.

Image Front End Program

This field will only appear if the optional **Image** package is installed. Enter the name of the program and the parameters that are used to extract a specific image from the photo database used with imaging, such as Swipe and Show.

Max View Recs

Enter the maximum number of records the system will have the ability to find and view. This is usually set to 500. This field controls the number of records shown in a picklist.

CAUTION

This figure is dependent on system memory and number of users. Do not change this field to a higher number unless authorized to do so by your support representative. If set too high, the system will use excessive memory and may slow down and become non-responsive.

Number of Floors

Enter the number of floors (0 to 64) serviced by an elevator associated with the **Elevator Control** feature. See Chapter 22 - Elevator Control.

Number of Temporary Categories

The number of category slots available for use for temporary categories on the **Badges** form (default is 8). Temporary category slots

occupy the highest-numbered category slots. For example, on a system where the **Increased Categories** feature is enabled, if the **Number Of Temporary Categories** is set to 8, slots 89 through 96 are assigned for temporary categories. This means that these slots can be used for either permanent categories or temporary categories. This field is read-only, and is set during installation.

Temporary categories are set (on the **Badges** form) to be enabled at a certain date and time, and expire at a certain date and time.

Temporary Category Interval

The temporary category scheduling interval, in minutes. This field is read-only, and is set during installation. Temporary categories are scheduled on the hour, then after each interval specified by this value. For example, if this field is set to 30 minutes (the default value), temporary categories are scheduled on the hour and on the half-hour.

Temporary Category Offset

This field indicates the time that temporary category scheduling will begin. For example, if this field is set to 5 minutes (the default value), temporary category scheduling will begin 5 minutes prior to each **Temporary Category Interval** time. This field is read-only, and is set during installation.

Alarm Monitor Color Scheme

Select one of the two radio buttons, depending on how you want to implement alarm color.

Processing State
Select this button if you want all alarms of one state to be of the same color. The **Processing States** are **Active**, **Bumped**, **Notified**, **Remote**, **Pending**, and **Completed**. For example, if you want all **Active** alarms to be white text on a red background and all **Completed** alarms to be white text on a green background, select this button. See “Alarm Color, Processing State” on page 8.11.

Alarm Description
Select this button if you want to select text and background colors on an individual alarm basis. If you choose this option, the **Alarm Color** window will be displayed on the **Alarms** form. See “Alarm Colors” on page 8.9.

Record Remove Maximum

Specifies the maximum number of badge records that can be removed during the **Record Remove Interval**. It is not required to restart Picture Perfect or the **Badges** form when changing this setting.

Record Remove Interval

Specifies a period of time (in minutes) during which a group of badge records may be removed. The system removes badge records for this period of time, or until the number of badge records set under **Record Remove Maximum** has been reached, whichever comes first. If more badges are to be removed, the system waits until the beginning of the next interval, then automatically reinitiates the badge removal process. This process is repeated until all listed badges have been removed. The minimum setting is one minute. It is not required to restart Picture Perfect or the **Badges** form when changing this setting.

NOTE

The badge removal process is initiated by clicking The **Remove** function button on the **Badges** form. See “Removing Badge Records” on page 14.7.

Number of User Fields

This field displays the number of User Fields that will appear on the **Badges** form. User Fields are used for detailed badgeholder identification. This field is read-only and is set during installation.

Refer to Figure 4-16 for the bottom portion of the **Parameters** form.

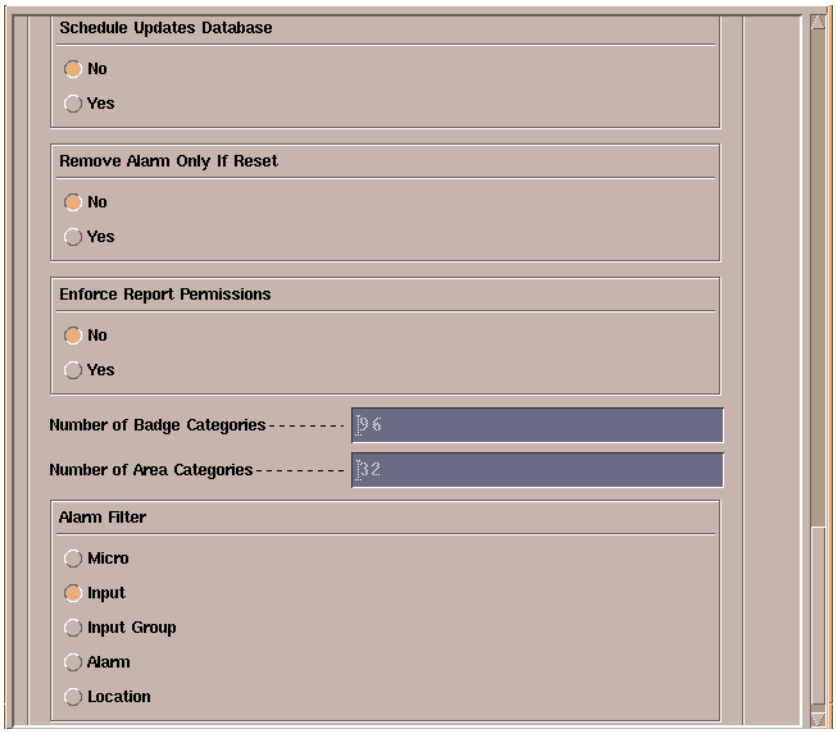


Figure 4-16. Parameters Form (Bottom)

Schedule Updates Database

When a micro runs a schedule, a SUP (Schedule UPdate) message is sent to the host. This SUP message gets logged in the **`/cas/log/sup.mmdd`** log file where **`mm`** is the current month and **`dd`** the day. If this value is set to **Yes** (recommended), then the database is updated to reflect the value changed by the schedule.

Remove Alarm Only if Reset

This field will alter the operation of the **Remove** button in the **Alarm Response** window. If the **No** button is selected, the **Remove** button will operate normally, that is, it will always be available. If **Yes** is selected (recommended), the **Remove** button will be grayed out unless the alarm is in reset state. This means that the operator will be unable to remove the alarm until it has been reset. The exception is alarms with the **Immediate Reset Input** control option set. Because these alarms move instantly into reset state, the **Remove** button will always be available.

Enforce Report Permissions

These radio buttons are used if you want to restrict report access to certain permission groups. By default, report permissions will be disabled. Select **Yes** to enable this option.

Number of Badge Categories

This field is read-only and is set during installation. If the **Increased Category** feature was selected during installation, 96 categories are available for assignment to a badge. Otherwise, 32 categories are available for assignment to a badge. To access an area, a badge must match at least one category that is assigned to that area.

Number of Area Categories

This field is read-only and is set during installation. If the **Increased Category** feature was selected during installation, 32 categories are available for assignment to an area or an area event. Otherwise, 10 categories are available for assignment to an area or an area event. To access an area, a badge must match at least one category that is assigned to that area.

Alarm Filter

Micro
If this radio button is selected, the alarm will be assigned the same facility as the micro record from which it originated.

Input
If this radio button is selected, the alarm will be assigned the same facility as the input record with which it is associated.

Input Group
If this radio button is selected, the alarm will be assigned the same facility as the input group record with which it is associated.

Alarm
If this radio button is selected, the alarm will be assigned the same facility as the alarm record with which it is associated.

Location
The **Location** column in the **Access Vision Alarm Monitor** displays the name of the door, reader, input, or micro that the alarm originated from. If this radio button is selected, the alarm will be assigned the facility of the door, reader, input, or micro displayed in the **Location** column.

Departments

Use the **Departments** form (Figure 4-17) to define a department. The department names entered here form a picklist that will be used on the **Badges** form to assign a department to each badge.

Setup

➤ **To define a department record:**

1. Select **Access**, then **Departments**.
2. Complete the **Departments** form. For a description of each field, see "The Departments Form" on page 4.37.
3. Click **Save**.

The Departments Form

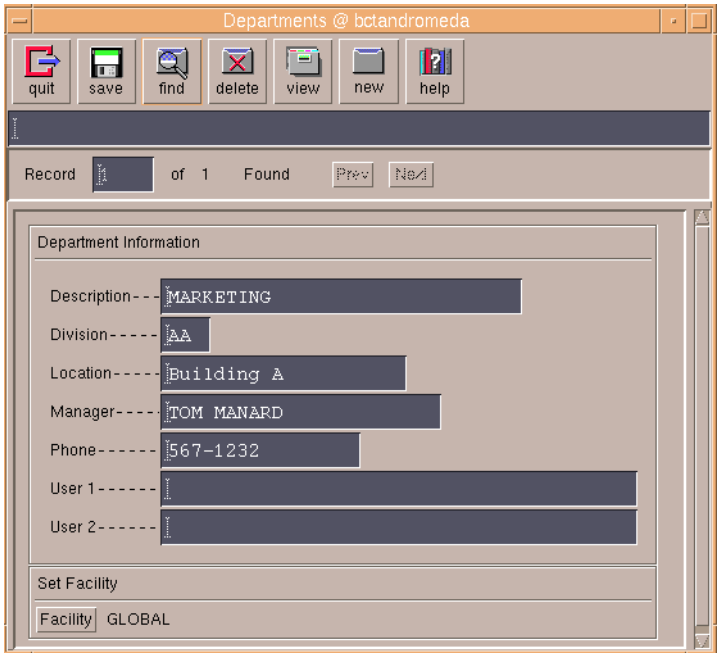


Figure 4-17. Departments Form

Description

Enter the identification name of the department to be added (up to 30 alphanumeric characters).

Division

Enter the division of the company to which the department reports.

Location

Enter the physical location of the department, such as Building A.

Manager

Enter the name of the department manager.

User Fields

The User1 and User2 field names can be changed using the User Customization Tool described in Chapter 31 - User Customization.

Set Facility

Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

Personnel Type

Use the **Personnel Type** form (Figure 4-18) to define different types of personnel. These entries form a picklist that will be used on the **Badges** form to assign a personnel type to each badge. Four personnel types are already entered into the system: **Permanent**, **Temporary**, **Contractor**, and **Visitor**. Additional types can be entered as described below.

Setup

➤ **To define a personnel type record:**

1. Select **Access**, then **Personnel Type**.
2. Complete the **Personnel Type** form. For a description of each field, see "The Personnel Type Form" on page 4.39.
3. Click **Save**.

The Personnel Type Form

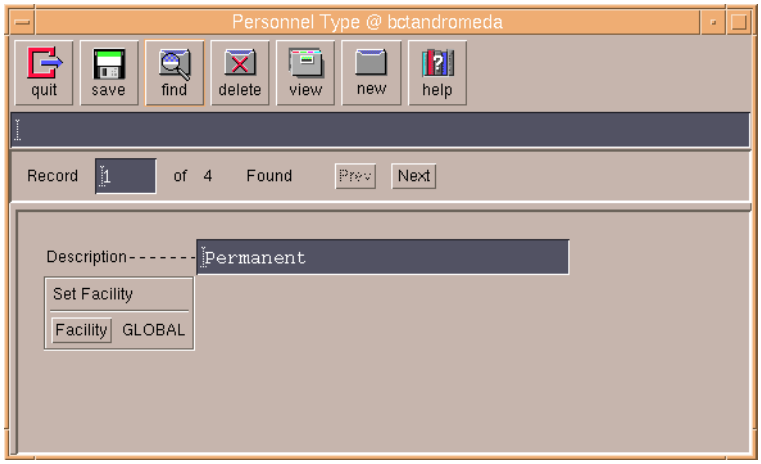


Figure 4-18. Personnel Type Form

Description

Enter the identification name of the personnel type to be added (up to 30 alphanumeric characters).

Set Facility

Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

NOTES

Facilities and Facility Profiles

Chapter 5

Overview

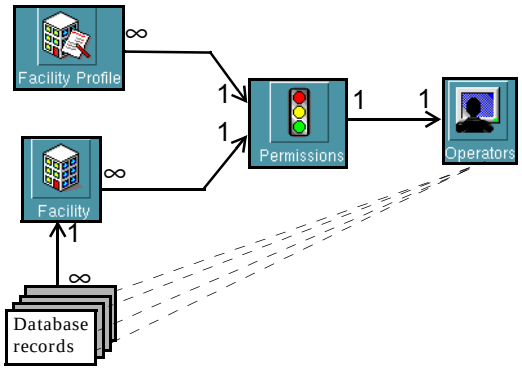
The Picture Perfect system allows you to group your system database records according to facilities. A facility can be records associated with a group of buildings in a city, a building, a floor in a building, a tenant, or a room on a particular floor in a building.

Facility records are text descriptions of these places. Database records can be grouped together by assigning them to a common facility. At installation, a facility, Global, is created and, by default, all database records are assigned to it.

A **Facility Profile** is a way of defining the record and field level access permissions. A default profile is created at installation, called the Global facility profile. This profile gives full access permission to all forms.

Once a facility profile is defined, it can be associated with a facility and assigned to a permission. This permission is then assigned to an operator and determines what records the operator is allowed to access and what they are allowed to do with them, based on the facility of the particular record. For example, when the Global facility is paired with the Global facility profile and assigned to an operator, that operator has full access to the database records associated with the Global facility.

The following diagram depicts the relationship of the Picture Perfect tables when setting up facilities in your system. All of the records stored in the Picture Perfect database are assigned a facility, either Global or another facility in your system. To determine the records that an operator can access, facilities are paired with a profile defining the level of access, and are then assigned to the operator's permission.



1. A facility consists of database records.
2. A permission consists of profiles paired with facilities.
3. When an operator is assigned a permission, their access to database records is determined.

Figure 5-1. Facility/Facility Profile Overview

What You Will Be Doing

This chapter describes the following forms and shows you how to link them to your operators and permissions when using facilities in your system:

- ❒ Facilities
- ❒ Facility Profile
- ❒ Facility Set Manager
- ❒ Linking Facilities, Facility Profiles, Permissions, and Operators

Facilities

Facilities can be assigned to certain records to restrict access to those records. Each operator can have a unique set of permissions assigned to him per facility; this is the operator's **Facility Profile**. All Picture Perfect forms support facilities. A facility field is displayed on each form with the following exceptions:

- The Alarm Monitor, Activity Monitor, and the Status form, Although these forms do not have a **Facility** field, incoming messages are filtered by facility.
- Although the following forms do not have a **Facility** field, access to them is governed by **Facility Profiles**:

  Parameters

  Backup

  Restore

  Alarm Color

  Keys

  History

  Sql

A default facility is created at installation time, **Global**, and is assigned to the default facility profile, **Global Facility Profile**. If an existing Picture Perfect system is being upgraded, all existing database records will be assigned to this facility, unless they are already associated with a facility.

The Facility Form

Use the **Facility** form to create and delete facility records.

Figure 5-2. Facility Form

Description

Enter a text description that defines a logical grouping, such as a group of buildings, a building, a floor in a building, or a room on a particular floor in a building.

How to Add or Delete a Facility

➤ **To add a facility:**

In addition to the default facility, Global, which is created at installation time, other facilities may be created to allow an operator access to only those records in a particular facility.

1. Select **Access**, then **Facility**.

2. In the **Description** field, enter a unique text description to decribe the facility. *For example, Headquarters.*

3. Click **Save**.

➤ **To delete a facility:**

Before deleting a facility, you should ask yourself two questions:

What do you want to do with the records that have the facility assigned to them?

You will be given the opportunity to re-assign the facility for those related records to **Global** or to change them to an existing facility. If you choose to re-assign them to an existing facility, you should keep in mind who has

access to that facility because that operator will now have access to those records using their existing facility profile.

What operators are already using that facility?

When a facility is deleted, it will remove the facility-to-facility profile relationships for any operator using that facility. The facility record is deleted but the facility profile record is left intact. This means you may need to re-assign the facility profile to a new facility for each operator that may have been using the deleted facility. Deleting an existing facility will effectively remove an operator's access to that facility.

1. Select **Access**, then **Facility**.

2. From the toolbar, click **Find**. Navigate to the facility that you wish to delete.

3. From the toolbar, click **Delete**.

   Result: The **Delete Facility** window will display.

Figure 5-3. Delete Facility Window

4. Select either:
   - **Change Related Records to Global (-1)**

     Changes the records in the badge, micro, reader, door, input, input groups, output, and output group tables, that are using the facility to be deleted, to the Global Facility ID of -1.

   - **Select New Facility for Related Records**

     Allows the operator to pick a new facility for the records, in the badge, micro, reader, door, input, input groups, output, and output group tables, that are currently using the facility to be deleted. Selecting this option will cause a picklist to display, allowing you to choose a new facility for those related records.

5. Click **Ok**.

Facility Profiles

A facility profile is a way of defining an operator's record and field level access permissions for the Picture Perfect forms. This feature allows an administrator to grant an operator a different level of permission for each set of records (Facility) to which he has access. For example, an operator may be assigned the facility profile, *Global*, at the one facility which allows full access to all forms, and the facility profile, *Update: Badges*, at another facility which restricts access to updating records on the Badges form.

The default facility profile, **Global**, is created during installation and, when paired with a facility, gives an operator full access to the associated database records. Full access is defined as being able to view, update, insert, and delete at the record level on all Picture Perfect forms. Full access also grants view and update permission at the field level on the **Badges** form and the ability to lock and unlock doors on the **Doors** form.

NOTE

When the **Global** facility profile is assigned to the **Global** facility and assigned to an operator, the operator has access to all database records in the **Global** facility only. The term "Global" defines a default facility or profile; it does not encompass other facilities.

The Facility Profiles Form

Use the **Facility Profiles** form to create and delete facility profiles.

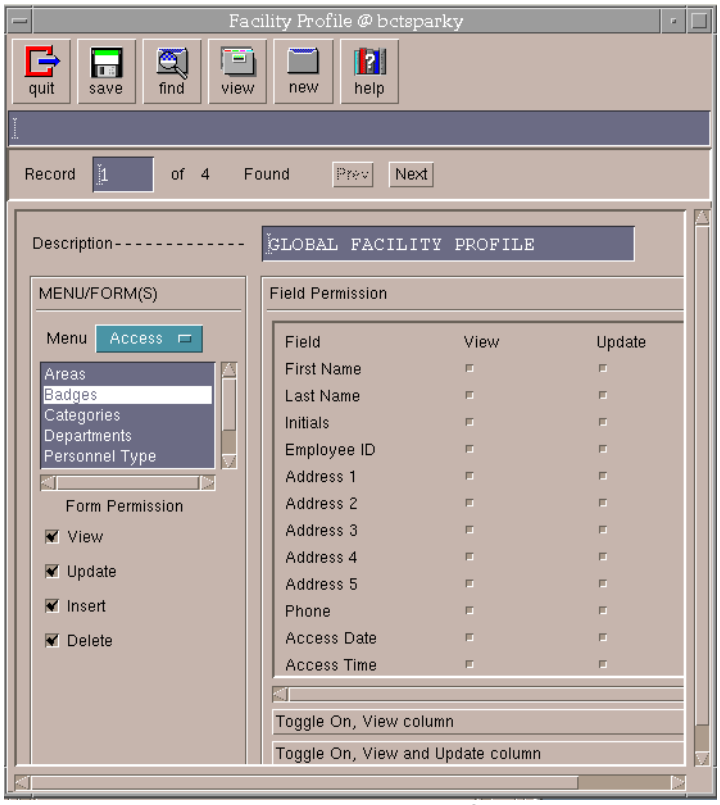


Figure 5-4. Facility Profile Form

Description

Enter a description (up to 30 characters). This description will appear in the **Facility** list box of the **Permission** form

Menu

The button on the right side of the **Menu** label lets you select a menu corresponding to the Picture Perfect **Main Menu** icons. The **Access**, **Monitors**, **Devices** , **Status**, **Control**, **Schedule**, **Reports**, and **Messages** buttons, on the right side of the **Menu** label, control which **Main Menu** buttons will display for an operator assigned a permission with this facility profile. (If you have an optional package installed, such as Alarm Graphics, an additional button will be displayed for it.) Each button displays a corresponding list of the forms that an operator with this permission can be permitted to use. If no forms are selected from the list, the icon will not be available from the Picture Perfect **Main Menu**.

Form

The forms displayed are the forms corresponding to the sub-menu items for the menu displayed on the right side of the **Menu** label. Select the one you currently want to work with, for example, **Badges**. Select the appropriate **View**, **Update**, **Insert**, or **Delete** radio button for each form. If none of the buttons is selected, the form will not be available to the operator.

Form Permission

This section is used to set up the record level permissions for the selected form. The four toggle buttons allow you to determine the level of permission of the operator assigned to this facility profile.

Some of these buttons affect the **Field Permission** columns, on those forms that use field-level permissions, such as **Badges** and **Doors**. For example if the **Form Permission** for **Update** is toggled off, the **Field Permission: Update** column will be cleared and unavailable for selection.

View

Used to determine if the operator will be allowed to view a record associated with the selected form.

If toggled **On**, the **Field Permission: View** column will be activated on those forms that use field-level permissions. **View** is automatically toggled **On** when the **Update**, **Insert**, or **Delete** buttons are toggled **On**.

If **View** is toggled **Off**, the **Update**, **Insert**, and **Delete** buttons are automatically toggled **Off**.

Update

Used to determine if the operator will be allowed to update a record associated with the selected form.

If toggled **On**, the **Field Permission**: **View** and **Update** columns will be activated on forms that use field-level permissions.

If toggled **Off**, the **Field Permission: Update** column buttons are automatically toggled **Off** and the column is unavailable on forms that use field-level permissions. Use this to clear all the toggle buttons in this column to **Off**.

Insert

Used to determine if the operator will be allowed to insert or add a record using the selected form.

If toggled **On**, the **Field Permission: View** and **Update** columns will be activated on forms that use field-level permissions.

If toggled **Off**, and **Update** and **Delete** are also toggled **Off**. On forms that use field-level permissions, the **Field Permission: Update** column buttons are automatically toggled **Off** and the column is unavailable. If **Update** or **Delete** is toggled **On**, the **Field Permission: Update** column will remain activated.

Delete

Used to determine if the operator will be allowed to delete a record associated with the selected form.

If toggled **On**, the **Field Permission: View** and **Update** columns will be activated on forms that use field-level permissions.

If toggled **Off**, and **Update** and **Insert** are also toggled **Off**. On forms that use field-level permissions, the **Field Permission: Update** column buttons are automatically toggled **Off** and the column is unavailable. If **Update** or **Insert** is toggled **On**, the **Field Permission: Update** column will remain activated.

Field Permission

This section is used to set up the field level permissions for the **Badges** and/or **Doors** forms. This window becomes active with data when either **Badges** or **Doors** has been selected from the **Menu/Form** section.

The data in the **Field Permission** window is shown in three columns: **Field**, **View**, and **Update**. This window should be used to set the field level permissions for the selected form by setting the toggle buttons to **On** or **Off** in the **View** and **Update** columns.

Field

This column contains the field description of each of the fields that can be toggled. The description labels will appear unavailable or grayed out if neither the **Field Permission: View** or **Update** columns are activated. These can be activated through the **Record Permission** toggle buttons. See “Form Permission” on page 5.7.

View

This column contains the toggle buttons that determine if the field is allowed to be viewed or not from the selected **Badges** or **Doors** form. The **Record Permission: View** button must be toggled **On** for this column to be active.

Toggling a button **Off** in this column will automatically toggle **Off** the associated **Update** button next to it, if it is **On**.

Update

This column contains the toggle buttons that determine if the field can be edited or not from the selected **Badges** or **Doors** form. The **Form Permission: Update** button must be toggled **On** for this column to be active.

Toggle On, View column

This button will cause all of the buttons in the **View** column to be turned **On**. The **View** column must be activated for this to take affect. This means the **Record Permission: View** button must be toggled **On**.

Toggle On, View and Update column

This button will cause all of the buttons in the **View** and **Update** columns to be turned **On**. The **View** and **Update** columns must be activated for this to take affect. This means the **Record Permission: View** button, in combination with the **Update**, **Insert**, or **Delete** buttons, must be toggled **On**.

NOTE

To toggle **Off** all the buttons in the **View** or **Update** column, use the **Record Permission: View** or **Update** button. Toggling **Off** the **Record Permission: View** button will reset all buttons to **Off** in the **Field Permission: View** column and the **Update** column, if appicable, since **Update** implies **View.** You must save the record before any changes become permanent.

How to Add a Facility Profile

NOTE

Once created, a facility profile can not be deleted. You can modify the facility profile record and rename it if desired. The changes are automatically reflected in any associated records.

➤ **To add a facility profile:**

The default facility profile, **Global**, is created at installation time. Other facility profiles may be created to limit the way an operator may access records in a particular facility.

NOTE

Since there are numerous relationships between the different sections of this form, we recommend you follow the sequence of steps below when completing the form.

1. Select **Control**, then **Facility Profile**.

2. From the toolbar, click **New**.
3. In the **Description** field, enter a unique text description to decribe the facility profile. *For example, Update: Badges.*
4. Click the box next to the label, **Menu**.

   Result: A list of menu items will display. These menu items correspond to the **Main Menu** icons of Picture Perfect, for example: *Access, Monitors, Devices* and so on.
5. Select a **Menu** item.

   Result: In the box below, a list of forms will display. These forms correspond to the icons displayed when you click the selected **Main Menu** icon of Picture Perfect. For example, if you selected *Access* as the menu item, the resulting forms would be *Areas, Badges, Categories,* and so on.
6. Select the form with which you wish to work.
7. Set the desired **Record** permissions, **View**, **Update**, **Insert**, or **Delete**.
8. If the form selected in step 6 was **Badges**, or **Doors**, set the desired **Field** permissions, **View** or **Update**.
9. Repeat step 6 through step 8 for each form in the selected **Menu** item.
10. Repeat step 5 through step 8 for each **Menu** item.
11. Click **Save**.

Facility Set Manager

After successfully logging in to Picture Perfect, a list of the facilities available for selection based on the operator's facility profiles will display. If an operator has access to only one facility, it will be automatically enabled at login.

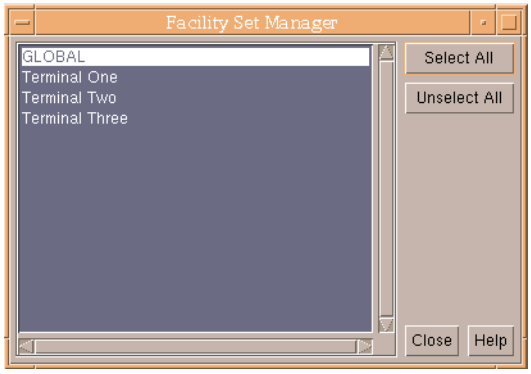


Figure 5-5. Facility Set Manager

How to Change the Active Facility

➤ **To change the active facility set:**

1. If you want to change the active facility in a session, left click on your desktop to access the **Clients** menu and select **Change Active Facility Set**. The change will not affect forms that are already open.

Figure 5-6. Clients Menu - Change Active Facility Set

2. Click on a facility to select or deselect it. Or click on **Select All** or **Deselect All** to select or deselect all of the available facility sets.

3. Click **Close**. The operator will have access to the records in the selected facilities, as defined in the facility profiles assigned to them.

Linking Facilities, Facility Profiles, Permissions, and Operators

When you launch Picture Perfect 2.0, the system is configured by default with one default facility record, **Global**, one default facility profile record, **Global**, and a permission record, **System Administrator**. The **System Administrator** permission record is by default assigned to the facility **Global**.

As you add operators to your system, in order to add or modify records in a different facility (other than **Global**), the **System Administrator** permission record must be assigned to that specific facility.

Table 5-1: Examples of how Facility Profiles work

Operator	Permission Record	Facility Profile	Facility	Result
install	System Administrator (responsible for the system administrative functions for the entire system)	Global (allows full access on all forms)	Global	This combination allows operator, install, to perform all functions on all records assigned to the Global Facility on all forms.
		Global (allows full access on all forms)	Facility X	This combination allows operator, install, to perform all functions on all records assigned to Facility X on all forms.
		Global (allows full access on all forms)	Facility Y	This combination allows operator, install, to perform all functions on all records assigned to Facility Y on all forms.
		Global (allows full access on all forms)	Facility Z	This combination allows operator, install, to perform all functions on all records assigned to Facility Z on all forms.
John Smith	Site Administrator (responsible for the system administrative functions for Facility X)	Update (allows update access on all forms)	Faciltiy X	This combination allows operator, John Smith, to perform update functions on all records assigned to Facility X on all forms.
		View (allows View only access on all forms)	Global	This combination allows operator, John Smith, to view all records assigned to the Global facility on all forms.
Jane Doe	Badge Administrator	Update Badges (allows update access to records on the Badges form)	Facility Y	This combination allows operator, Jane Doe, to update all records assigned to Facility Y on the Badges form.
		View Operator (allows view access to records on the Operator form)	Global	This combination allows operator, Jane Doe, to view all records assigned to the Global Facility on the Operator form.

How to Link Facilities, Facility Profiles, Permissions, and Operators

Perform the following steps to link the facilities, facility profiles, permissions, and operators.

1. Define the facilities in your system, using the **Facility** form to describe the group of records. *For example, Facility X, Facility Y, and Facility Z.*

NOTE If your system consists of a single facility, you do not need to create additional facility records.

2. Define facility profiles, using the **Facility Profile** form to describe the level of access the operator will have. *For example, Full access, View only, Insert only, or Monitor.*

3. Define the permission records required, using the **Permissions** form to describe what function the operator will perform. *For example, System Administrator, Site Administrator, Badge Administrator, or Guard.* Then, assign a facility profile to the permission for each facility required. You can assign the same facility profile to multiple facilities and permission records. *For example, you could assign the Monitor facility profile to a Guard permission in Facility X and Facility Y as well as to a Badge Admnistrator in Facility Z.*

4. Assign the permission to an operator, using the **Operator** form. *For example, an operator may be assigned as a Guard at Facility X with a Monitor profile and at Facility Y with a Full access profile.*

On the following pages we will perform the steps necessary to achieve the result for the operator, Jane Doe, from Table 5-1, “Examples of how Facility Profiles work,” on page 12.

Jane Doe	Badge Administrator	Update Badges (allows update access to records on the Badges form)	Facility Y	This combination allows operator, Jane Doe, to update all records assigned to Facility Y on the Badges form.
		View Operator (allows view access to records on the Operator form)	Global	This combination allows operator, Jane Doe, to view all records assigned to the Global Facility on the Operator form.

Step 1. Defining Facilities

1. Select **Access**, then **Facility**.
2. In the **Description** field, enter a unique text description. *For example, Facility X*.
3. Click **Save**.
4. Repeat step 2 and step 3 for *Facility Y* and *Facility Z*.

   Result: The Facility records will look similar to the following.

Figure 5-7. Facility X

Figure 5-8. Facility Y

Figure 5-9. Facility Z

Step 2. Defining Facility Profiles

➤ **To create the Update: Badges facility profile**

1. Select **Control**, then **Facility Profile**.
2. In the **Description** field, type: *Update: Badges.*
3. Click the box next to the label, **Menu**.

   Result: A list of menu items will display.
4. Select as a **Menu** item: *Access*

   Result: In the box below, a list of forms will display.
5. From the list of forms, select: *Badges.*
6. For **Record** permissions, select: *Update.*
7. To set the desired **Field** permissions, click*: Toggle On, View and Update column*
8. Click **Save**.

   Result: The *Update: Badges* facility profile record will look similar to the following.

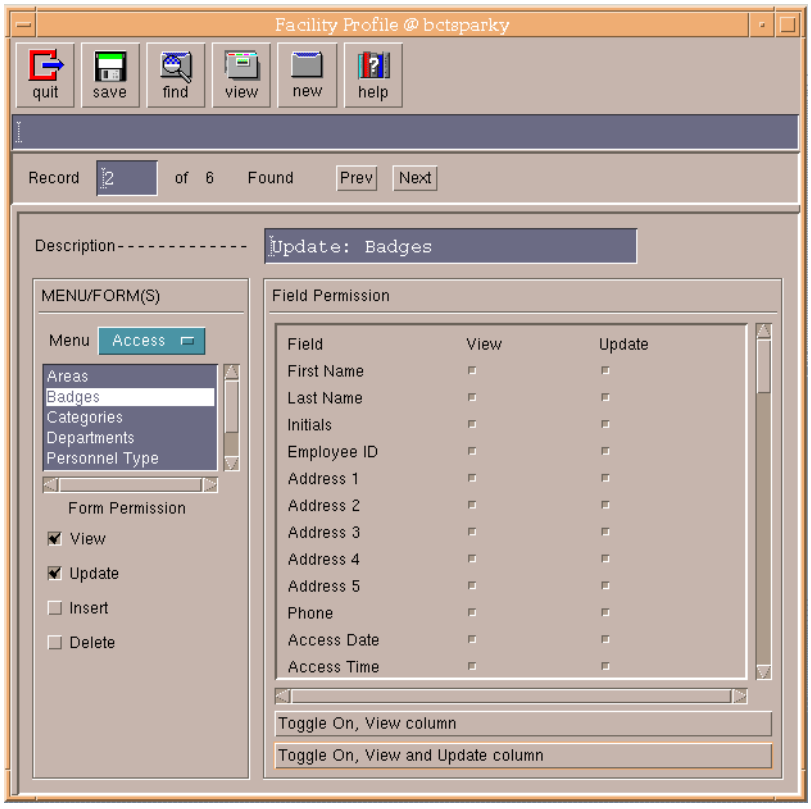


Figure 5-10. Update Badge Facility Profile

➤ **To create the View: Operator facility profile**

1. Select **Control**, then **Facility Profile**.
2. In the **Description** field, type: *View: Operator*.
3. Click the box next to the label, **Menu**.

   Result: A list of menu items will display.
4. Select as a **Menu** item: *Control*

   Result: In the box below, a list of forms will display.
5. From the list of forms, select: *Operator*.
6. For **Record** permissions, select: *View*.
7. Click **Save**.

   Result: The *View: Opeator* facility profile record will look similar to the following.

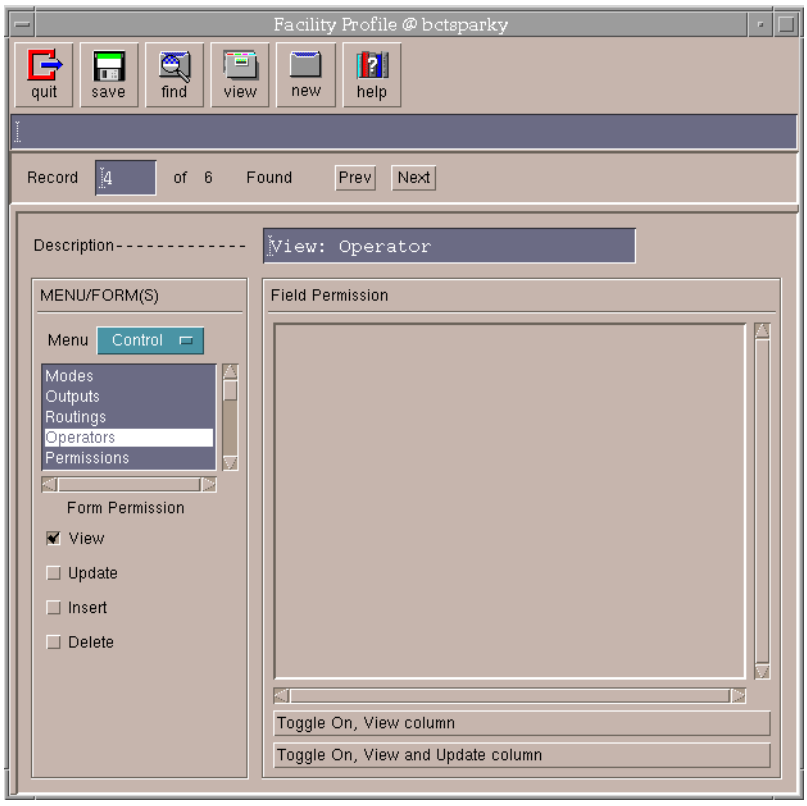


Figure 5-11. View Operator Facility Profile

Step 3. Defining Permissions and Assigning a Facility Profile

1. Select **Control**, then **Permissions**.
2. In the **Description** field, type: *Badge Administrator*
3. Click the **Facility** button and select: *Global*
4. In the **Facility** window, double-click on *Facility Y*.

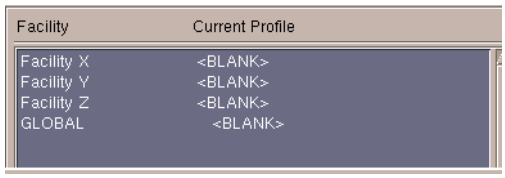


Figure 5-12. Facility Window

Result: A **Facility Profile** window will display a list of the defined facility profile records.

Figure 5-13. Facility Profile Window

5. From the list, select: *Update: Badges*
6. Click **Ok**.
7. Repeat step 4 through step 6, substituting *Global* in step 4 and *View: Operator* in step 5.

   Result: In the **Facility** window, the **Current Profile** column will reflect the newly selected profile. In our example, the **Facility** window will now look like this:

Figure 5-14. Current Profile Column

8. Click **Save**.

   Result: The *Badge Administrator* record will look similar to the following.

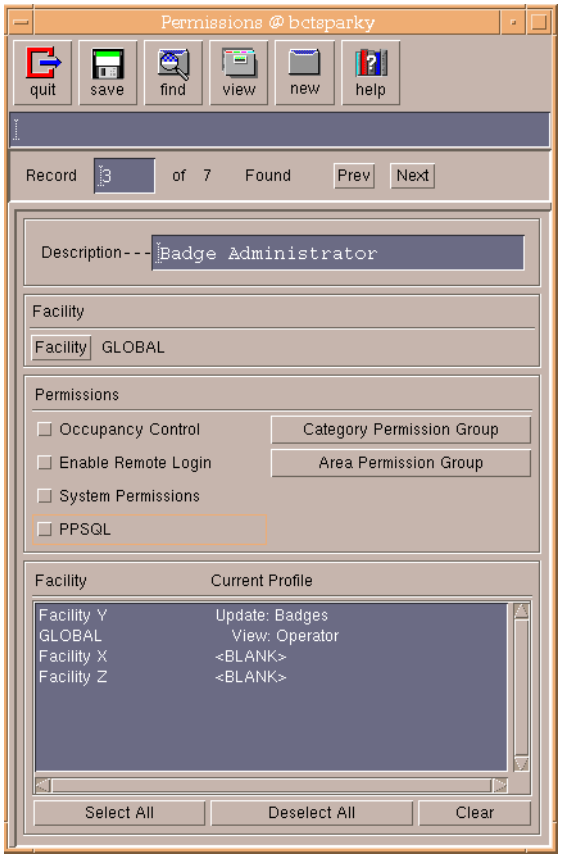


Figure 5-15. Permissions Form

Step 4. Assign the Permission to an Operator

1. Select **Control**, **Operator**.
2. In the **User Name** field, type: *Jane Doe*
3. In the **Employee ID** field, type: *33333*
4. In the **Login Id** field, type: *jdoe*
5. Click the **Country** button and select: *English in US*
6. Click the **Permission** button and select: *Badge Administrator<GLOBAL>*

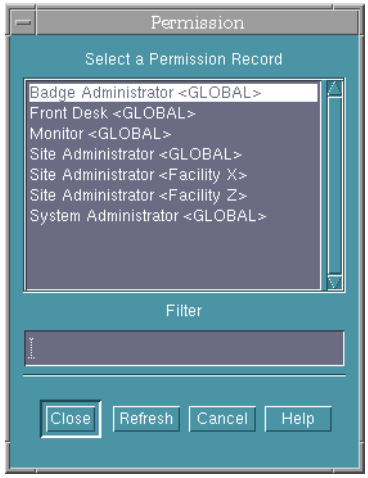


Figure 5-16. Operator Permission Window

7. Click **Close** to return to the **Operators** form.
8. Click the **Facility** button and select: *Global*
9. Click **Close** to return to the **Operators** form.
10. Click **Save**.

    Result: The operator, *Jane Doe*, has the permission of *Badge Administrator*, which allows her to update all badge records assigned to Facility Y and to view all operator records assigned to the Global facility.

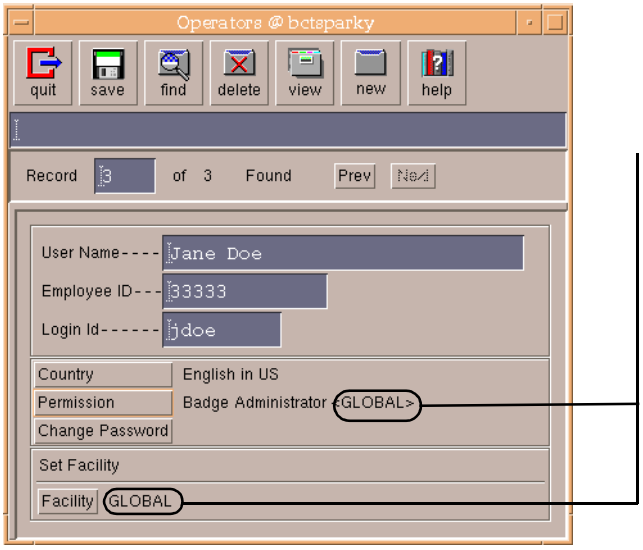


Figure 5-17. Operator Form

When *Jane Doe* logs into Picture Perfect:

- If she selects *Facility Y* from the Facilty Manager, her menu options will look like this:

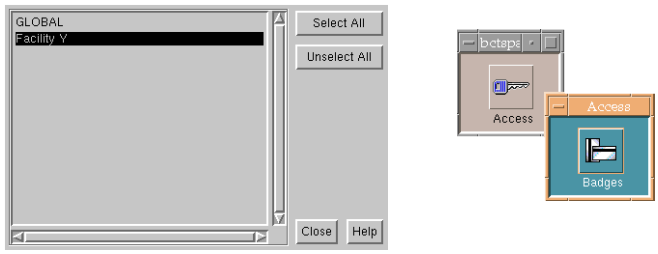


Figure 5-18. Example: Facility Y Menu Options

- If she selects *Global* from the Facility Manager, her menu options will look like this:

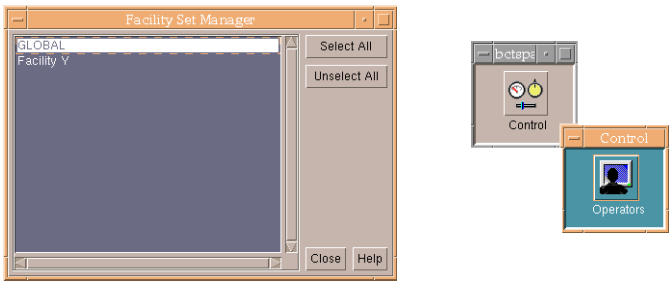


Figure 5-19. Example: Global Facility Menu Options

- If she clicks *Select All*, her menu options will look like this:

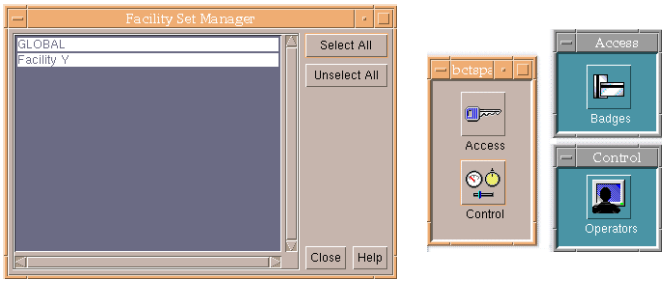


Figure 5-20. Example: All Facilities Menu Options

NOTES

Permissions and Operators

Chapter 6

Overview

The Picture Perfect system allows you to manage the system capabilities of each operator by assigning them certain permissions. For example:

Use **Permissions** to control:

- Which facility profiles are assigned to an operator.
- Which functions (find, update, and delete) an operator is permitted to use in each menu.
- Which categories an operator is permitted to assign to areas and badges.
- Which areas an operator is permitted to assign to readers and doors.
- Which reports an operator is permitted to access.

What You Will Be Doing

This chapter shows you how to create **Permission Groups**, set up **Permissions**, and authorize individual operators to log in and use the functions associated with their **Operator Permission**.

Permission Groups

There are two types of permission groups: **Area/Category** and **Report**.

An **Area/Category** permission group defines the categories and areas that an operator is permitted to assign. The system requires at least one permission group in addition to the default permission group (**All Groups Allowed**). The **All Groups Allowed** permission group gives an operator full access to all **Category** groups and all **Area** groups. Each permission group created with the **Area/Category** type, will appear on both the **Area** permission group and **Category** permission group picklists of the **Permissions** form along with the default **All Groups Allowed**.

A **Report** permission group can be assigned to reports if the **Enforce Report** permissions option is enabled through the **Control/Parameters** form. This offers the capability to assign reports to report permission groups and to restrict operator report access to only those reports that the operator permission record specifies. The **All Groups Allowed** permission group gives an operator full access to all **Report** groups. Each permission group created with the **Report** type will appear on the **Report**

permission group picklist of the **Permissions** form along with the default **All Groups Allowed**.

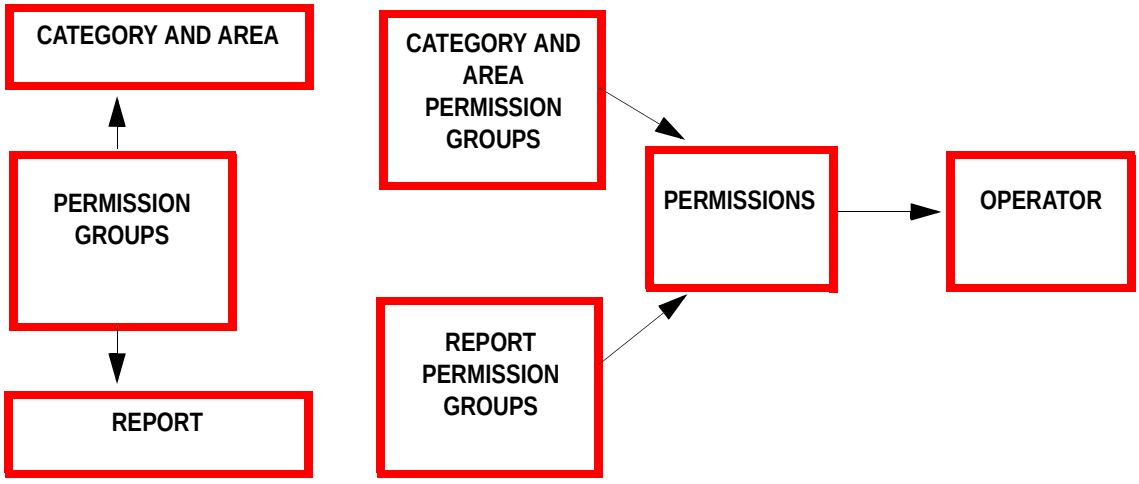


Figure 6-1. Relationship Between Permissions and Permission Groups

If you want to divide responsibilities among operators, create several different permission groups (a separate permission group for each group of categories and / or areas). For example: **`Building 1, Building 2, Building 3`**. Then remove the special permission group **All Groups Allowed** and assign one or more of the newly created permission groups. An operator can have permission to assign up to 20 **Category** and **Area** groups and, if enabled, five **Report** groups.

Refer to Figure 6-2 for the **Perm Group** form.

Setup

➤ **To define Permission Group records:**

1. Select **Control**, then **Perm Group**.
2. Complete the **Permission Groups** form. For a description of each field, see “The Permission Group Form” on page 6.3.
3. Click **Save**.

The Permission Group Form

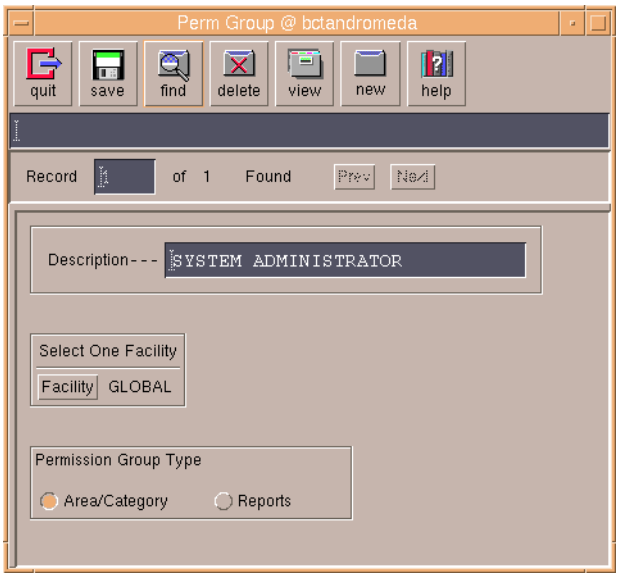


Figure 6-2. Perm Group Form

Description

Type any alphanumeric combination (1 to 30 alphanumeric characters) for **Description**. For example, **`System Administrator`**

Select One Facility

Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

Permission Group Type

Area/Category

An **Area/Category** permission group defines the categories and areas that an operator is permitted to assign.

Reports

A **Report** permission group can be assigned to reports if the **Enforce Report** permissions option is enabled through the **Control/Parameters** form. This offers the capability to assign reports to report permission groups and to restrict operator report access to only those reports that the operator permission record specifies.

Permissions

Use the **Permissions** form (Figure 6-3) to define the functions that each operator level is permitted to perform, such as **System Administrator**, **Badge Administrator**, or **Alarm Operator**. Then that permission can be assigned to individual operators using a picklist.

Assign the **System Administrator** permission (a default) to one or more operators who have total responsibility for the Picture Perfect system and therefore require all functions.

NOTE

Once an operator is assigned System Permissions, it cannot be altered. To remove the system permissions, the operator will have to be deleted from Picture Perfect and the operating system and then added back into the system by creating a new operator record with the correct permissions.

Setup

➤ **To define permission records:**

1. Select **Control**, then **Permissions**.
2. Complete the **Permission** form. For a description of each field, see “The Permissions Form” on page 6.5.
3. Click **Save**.

The Permissions Form

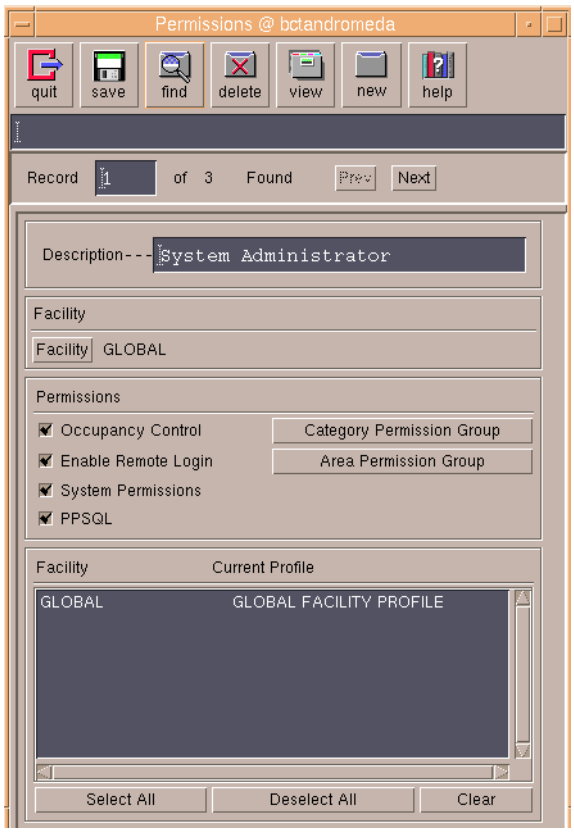


Figure 6-3. Permissions Form

Description

Enter the identification name of the permission to be added (up to 30 alphanumeric characters).

Facility

Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

Permissions

Occupancy Control

Set the **Occupancy Control** toggle button to on to allow the number of persons in a controlled space to be monitored, as well as activation of **Two Man Rule** enforcement. The standard **Two Man Rule (2MR)**, when enabled, requires that at least two authorized badge holders occupy a controlled space at the same time. the **Modified Two Man**

Rule (M2MR) further restricts access to controlled space based on specific **M2MR** category types.

Enable Remote Login
Set the **Enable Remote Login** toggle button on to have the ability to log in through the Picture Perfect Web Browser application from a remote terminal.

System Permissions
Set the **System Permissions** toggle button to **On** to permit an operator to use the operating system. There are three system permission functions available.

- First, this operator has the ability to bring up additional windows and log on to the system console.
- Second, this operator has, in addition to the **Workspace** menu (accessed by clicking the right mouse button on the root window) and the **Clients** menu (accessed by clicking the left mouse button on the root window), access to the **Programs** menu which is accessed by clicking the middle mouse button on the root window.
- Third, this operator has the use of a **Purge** button on the alarm monitor.

Toggle the **System Permissions** button to **Off** to restrict access. Normally, operators should not have access to the operating system.

PPSQL
Set the **PPSQL** toggle button **On** to have the ability to create new SQL reports or modify existing ones. If this button is set to **Off**, the operator will only be able to view pre-defined SQL reports.

Permission Groups

Category Permission Group
Click **Category Permission Group** to display the **Perm Group** picklist. Select the permission groups that designate categories this operator permission is allowed to assign to areas and badges, then click **Ok**. You can select up to 20 **Category** permission groups, or **All Groups Allowed**.

Area Permission Group
Click **Area Permission Group** to display the **Perm Group** picklist. Select the permission groups that designate areas for which this operator permission is allowed to assign readers and doors, then click **Ok**. You can select up to 20 **Area** permission groups, or **All Groups Allowed**.

Report Permission Group
If enforcement of report permissions is enabled, the Report permission group button is available. Click this button to display the Perm Group picklist. Select the permission groups that designate reports this operator permission is allowed to access, then click Ok. You can select up to five Report permission groups.

The assigned **Area** permission groups and **Category** permission groups restrict an operator's badge-issue functions. For example, in Figure 6-4, the Badge Admin - Plant operator permission is permitted to issue badges to Plant Building 1 and Plant Building 2 areas and categories; no permission is granted to issue badges for the Engineering Perm Group, the Purchasing Perm Group, etc. The Badge Admin - Plant permission allows the operator to issue badges only to plant employees.

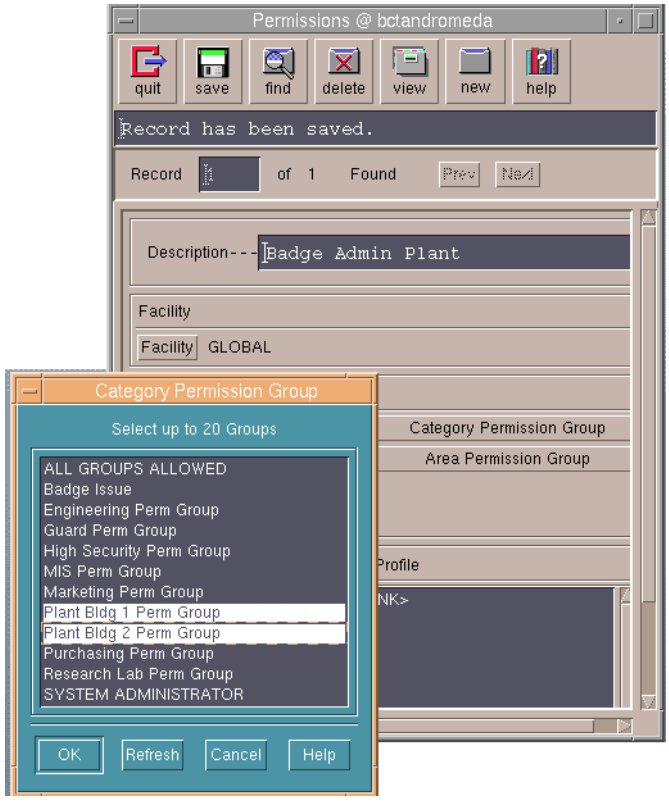


Figure 6-4. Permissions Form with Picklist for Badge Admin - Plant

If your site does not require the kind of operator restrictions shown in Figure 6-4, use the default permission group **All Groups Allowed**. For example, a Badge Administrator can be assigned the permission group **All Groups Allowed** which gives this operator the permission to issue badges to all area and category permission groups without restrictions.

Facility Profile Window

This window displays the active facilities, currently defined. If the facility has not been associated with a facility profile, it will appear with the word <BLANK> after it. If the facility has an associated profile, that profile description will appear after it. Select a facility and click on it to display a facility profile picklist.

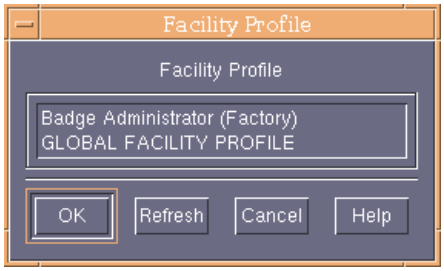


Figure 6-5. Faclity Profile Picklist

If you want to assign a facility profile to this facility, select a profile from the list, and click **OK**.

Operators

Use the **Operators** form (Figure 6-6) to assign **Operator** permissions to individual operators and to give them login capabilities on the system.

NOTE Always have more than one operator with System Administrator permissions. Deleting an operator only deletes that operator from the Picture Perfect system and not from the operating system.

Setup

➤ **To define an operator record:**

1. Select **Control**, then **Operators**.
2. Complete the **Operators** form. For a description of each field, see "The Operators Form" on page 6.9.

NOTE When adding a new operator in Linux, you must enter a password before saving the record.

3. Click **Save**.

The Operators Form

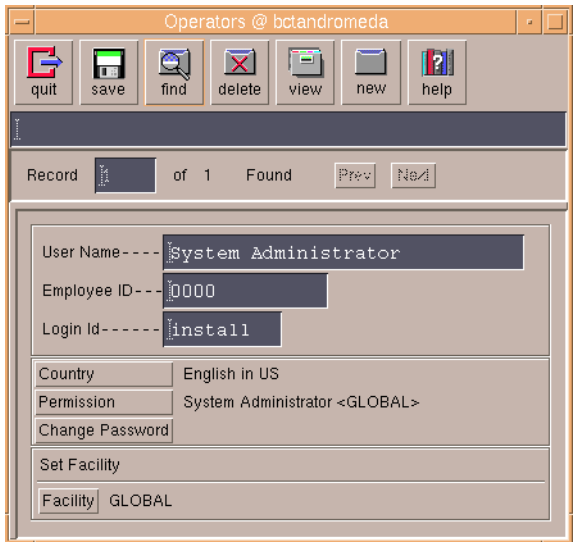


Figure 6-6. Operators Form

User Name

The name of the operator.

Employee ID

The Employee ID must be the same as Employee ID on the badge.

Login ID

The login ID is case sensitive, and must contain no spaces. Lower case is recommended. Each operator must have a unique **Login ID**.

Country

Click the **Country** button to display the **Country** picklist. If you have the **National Language Support (NLS)** option, the country selected determines the language displayed on your screen. The picklist is created at system installation according to available languages.

Figure 6-7. Country Picklist

Permission

Click the **Permission** button to display the **Permission** picklist (Figure 6-8). The permissions displayed were created using the Permissions form. See “The Permissions Form” on page 6.5. Select the desired permission for this operator, then click **Close**.

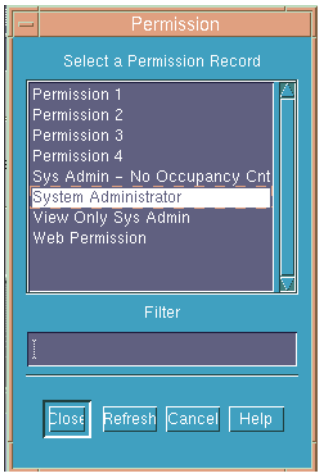


Figure 6-8. Permission Picklist

Change Password

Click the **Change Password** button to display the **Password** pop-up window (Figure 6-9). Type in the new password, then click **Ok**. When prompted, re-enter the password for verification, then click **Ok**. Notice that the # character displays as you type; the actual password is not visible. If you are changing an existing password, you will have to enter the old password before being prompted to enter the new one.

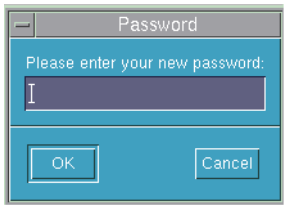


Figure 6-9. Change Password Window

NOTE When adding a new operator in Linux, you must enter a password before saving the record.

NOTE Foreign language characters (for example, á, ê, etc.) cannot be used within passwords.

Set Facility

Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

Alarm/Activity Monitor Routing

Chapter 7

Overview

This chapter describes the **Alarm/Activity Monitor Routing** feature and applies only to X-Terminal and X-emulation workstations and not to Web browser workstations. The Picture Perfect administrator may configure the system such that one set of alarms and activity is routed to a given terminal while another set of alarms and activity is routed to a different terminal. This allows Picture Perfect operators to monitor alarms and activity that affect their own areas.

For example, assume a Picture Perfect site consist of two buildings: Building A and Building B. In each of these buildings there is a terminal at an alarm monitoring station: Terminal A and Terminal B. During the day, two operators monitor the site; one operator in Building A, and one operator in Building B. At night, only one operator monitors the site from Building A.

One possible configuration could be that the daytime operators monitor alarms and activity that occur in their respective building, and the nighttime operator would monitor alarms and activity that occur in both buildings. This configuration could be extended such that, during the day, if an operator did not respond to an alarm in his building, the alarm would be "bumped" to the terminal in the other building.

The **Alarm/Activity Monitor Routing** feature allows for this type of configuration. It should be noted that **Alarm/Activity Monitor Routing** configuration is required only if you wish to restrict the displaying of the alarms and activity on a terminal. In other words, if you want all alarms and activity to be displayed on all terminals, you do not need to configure this feature. It should also be noted that activity routing is restricted to badge activity and digital input (DI) activity. Other activity, such as operator activity, cannot be routed to a specific terminal.

Prerequisites

The following Picture Perfect forms are prerequisites:

Forms	Purpose
TERMINALS	To define the terminal displays throughout the system.

What You Will Be Doing

This chapter shows you how to configure the **Alarm/Activity Monitor Routing** feature. To get ready to configure **Alarm/Activity Monitor Routing** using Picture Perfect forms, first plan your alarms on paper. Use your worksheets to document alarm locations (inputs), input groups, output devices, and alarm priorities. From this information, you should partition your site into sections that represent the various sets of alarms and activity.

Configuring **Alarm/Activity Monitor Routing** requires three steps:

1. Enter route definitions on the **Route Definitions** form.

2. Set up terminals to which alarms will be routed on the **Route Points** form.

3. Set a route definition for each alarm on the **Alarms** form.
   See Chapter 8 - Alarm Activity Messages and Alarms.

Route Definitions

Creating route definitions is the first step in configuring **Alarm/Activity Monitor Routing**. In general, a route definition corresponds to one section of your Picture Perfect site. In our example in "Overview" on page 7.1, we partitioned the site into two sections: Building A and Building B.

Refer to Figure 7-1 for the **Route Definitions** form.

Setup

➤ **To create a route definition record:**

1. Select **Control**, then **Route Definitions**.
2. Click **New**.
3. Complete the **Route Definitions** form. For a description of each field, see "The Route Definitions Form" on page 7.3.
4. Click **Save**.
5. Click **New** to add another route definition.

The Route Definitions Form

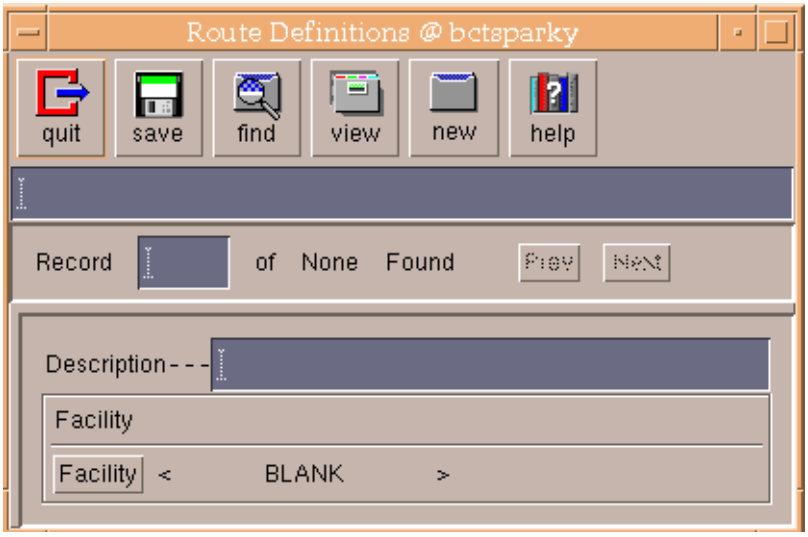


Figure 7-1. Route Definitions Form

Description

Type the route definition that will be used for alarm and activity routing (up to 30 alphanumeric characters). These entries create a **Route Definitions** picklist that will be used in the **Route Points** form, the **Alarms** form, the **Inputs** form, and the **Areas** form.

Select Facility

Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

Route Points

Creating route points is the next step in configuring **Alarm/Activity Monitor Routing**. A route point indicates to which terminals alarms and activity are routed and when they are routed. A route point also indicates which alarms are bumped and when they are bumped. A route point belongs to only one route definition; but several route points can belong to the same route definition.

In the example in "Overview" on page 7.1, there are three route points: (1) alarms / activity that occur in Building A, (2) alarms / activity that occur in Building B during the day, and (3) alarms / activity that occur in Building B at night.

Refer to Figure 7-2 for the **Route Points** form.

Setup

➤ **To create a route point record:**

1. Select **Control**, then **Route Points**.
2. Complete the **Route Points** form. For details on completing each field, see "The Route Points Form" on page 7.5.
3. Click **Save**.
4. Click **New** to add another **Route Point**.

The Route Points Form

The following is a list of fields that may require additional information for you to complete. The list is in the order that the fields appear on the form. There is no required sequence for you to follow.

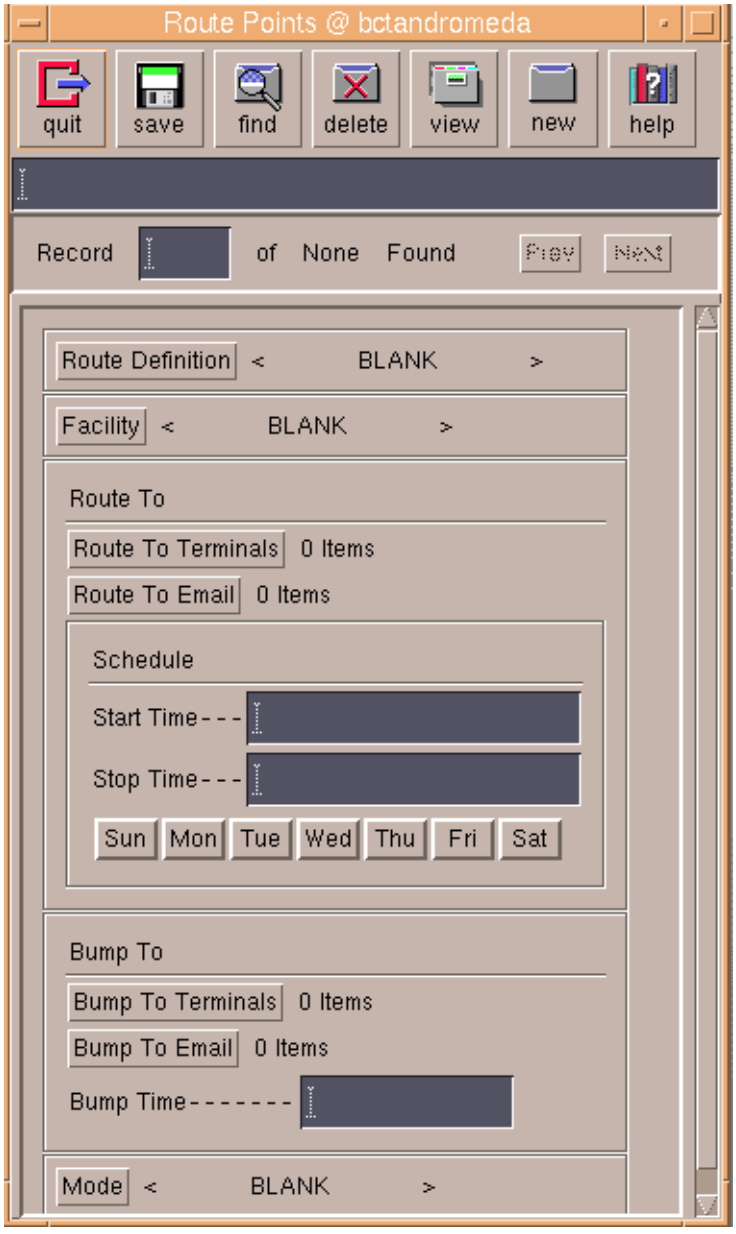


Figure 7-2. Route Points Form

Route Definition

This field identifies the current route point's route definition. Click the **Route Definition** button to display a picklist. Select the desired **Route**

Definition, then click **Ok**. This is a required field. In our example, one route definition is Building A.

Facility

Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

Route To Terminals

This field identifies which terminals are affected by this route point. The number of terminals selected is displayed. Click the **Route To Terminals** button to display a picklist of terminals. One or more terminals may be selected for this route point. A maximum of 32 terminals may be selected for a route point. As terminals are selected or unselected from the picklist, the **Route To Terminals** item count is updated. Click the **Close** button when you have finished selecting the terminals. This is not a required field; if no terminals are selected, alarms and activity with this route point's route definition will not be routed to a terminal.

Route to Email

This field identifies which e-mail addresses are associated with the route point. Click the **Route to Email** button to display a picklist of e-mail addresses. One or more addresses may be selected. Click the **Close** button when you have finished selecting the addresses. This is not a required field; if no addresses are selected, alarms and activity with this route point's route definition will not be routed to an e-mail address. If an e-mail address is selected, the system will not route the alarm to any terminals.

Start Time

This field identifies when a scheduled route point becomes enabled. The format of the value entered should conform to the time format in system configuration. If this value is blank, it defaults to zero which represents midnight. This field is required only if you want to use scheduled route points that begin at times other than zero.

Stop Time

This field identifies when a scheduled route point becomes disabled. The format of the value entered should conform to the time format in system configuration. If this value is blank, it defaults to midnight. This field is required only if you want to use scheduled route points that end at times other than midnight.

Sun - Sat

These toggle buttons indicate what days of the week this route point should be enabled. Select the desired days of the week by clicking the appropriate toggle button. If no days are selected, alarms and activity with this route point's route definition will not be routed.

Bump To Terminals

This field identifies the route point's bump terminals. The number of terminals selected is displayed. Click the **Bump To Terminals** button to display a picklist of terminals. One or more terminals (up to 32) may be selected as a bump terminal. As terminals are selected or unselected from the picklist, the **Bump To Terminals** item count is updated. Click the **Close** button when you have finished selecting the bump terminals. This is not a required field; if no terminals are selected, alarms with this route point will not be bumped. This field should be ignored if you are creating a route point that is used only for **Activity Monitor Routing**.

Bump to Email

This field identifies which e-mail addresses are associated with the route point. Click the **Bump to Email** button to display a picklist of e-mail addresses. One or more addresses may be selected. Click the **Close** button when you have finished selecting the addresses. This is not a required field; if no addresses are selected, alarms with this route point will not be bumped to an e-mail address. If an e-mail address is selected, the system will not bump the alarm to any terminals.

Bump Time

The value in this field must be in seconds, and must be greater than zero. The operator has this number of seconds to respond to the alarm before the alarm is bumped to the terminals selected in **Bump To Terminals**. This field should be ignored if you are creating a route point that is used only for **Activity Monitor Routing**. The default value in this field is blank**,** meaning that there is no bump time.

Mode

This field identifies the system mode under which this route point is valid. Click the **Mode** button to display the **Mode** picklist. Select the desired mode, then click **Ok**. This is not a required field. If this field is blank, the route point is valid for all system modes.

NOTE

If you are following the setup sequence recommended in Chapter 3, the **Mode** picklist will only show the default **Normal** and **Holiday** modes. See “Creating Modes” on page 16.2 to create your own custom modes; then return to this procedure to assign routing points for that mode.

Route Point Rules and Restrictions

There may be times when you question whether an alarm should or should not appear on the **Alarm Monitor**. Since a system configured for **Alarm /Activity Monitor Routing** may consist of many route points, it is possible for two route points to have conflicting route terminals. For example, assume that Route Point A and Route Point B belong to Route Definition A. Route Point A explicitly routes all alarms to *no terminals*, whereas Route Point B explicitly routes all alarms to *all terminals*. In this case, Route Point B has precedence. Because of the many possible combinations of terminals, start times, stop times, bump terminals, bump times, and modes, it may be confusing as to where an alarm or activity should be routed. The following lists some rules and restrictions that may be used to configure or troubleshoot **Alarm/Activity Monitor Routing**.

- If there is a terminal route conflict between two route points, the route point that displays the alarm has precedence.
- If an alarm is supposed to be bumped to a given terminal and two different bump times are given in two different route points for the alarm’s route definition, the shortest length of time determines when the alarm is bumped.
- Once an alarm is displayed on a terminal, only the operator can remove it. The disabling of a scheduled route point will not remove an existing alarm from the **Alarm Monitor**.
- When a scheduled route point is enabled, affected terminals are updated immediately. This event may cause alarms that were already in the system to appear on the **Alarm Monitor**.
- Alarms and activity with no route definitions are displayed on all **Alarm/Activity Monitors**.
- If a route definition consists of scheduled route points, every time slot throughout the day and week must be accounted for by a scheduled route point. Times that are not accounted for will default to all terminals in the system. This means that if a route definition has a scheduled route point from 8:00:00 to 17:00:00, then alarms and activity with that route point’s route definition will be routed to only those terminals listed in the route point during that time period. But there are two other time periods for which there are no route points:

23:59:00 to 8:00:00 and 17:00:00 to 23:59:00. During these two time periods, alarms and activity with this route definition will be routed to all terminals in the system.

- The **Alarm Monitor** will reflect any changes made to the **Alarm Monitor Routing** configuration. Database updates will, however, only add entries to the **Alarm Monitor**; they cannot remove entries.

Other Applications

The **Alarm Monitor Routing** feature not only affects the **Alarm Monitor**; it also affects other programs that use the **Alarm Monitor Buffer**. These programs include the **Alarm Alerts** pop-up and the **Alarm Graphics Monitor** program. The same rules that apply to the **Alarm Monitor** also apply to these two applications. The **Alarm Alert** program will display only if alarms can be viewed on the **Alarm Monitor**. The **Alarm Graphics Monitor** will not flash an object unless it can be viewed on the **Alarm Monitor**.

NOTES

Alarm Activity Messages and Alarms

Chapter 8

Overview

The Picture Perfect system monitors digital inputs (DIs) for sensors or contacts and drives digital outputs (DOs) for alarms and output devices. The system notifies the operator of alarms using pop-up windows, and in a scrolling window called the **Alarm Monitor**.

When an alarm occurs, the system beeps and displays a pop-up window on each terminal configured to receive that alarm, and thereby notifies the operator. The operator then displays alarm instructions by selecting the alarm from a scrolling list on the **Alarm Monitor**. The operator records a response to an alarm either by selecting a pre-written alarm response from the **Alarm Response** window or by typing a response.

Each alarm can be configured to notify the operator as to what caused the alarm, what actions are required, and what alarm responses the operator can select to describe actions taken. Each alarm's priority can be defined so that if alarms occur simultaneously, they display on the **Alarm Monitor** in the order of their importance. Priorities range from 1 (highest) to 500 (lowest). Alarms that have the same priority show the alarm that occurred latest at the top.

For information on how to configure a terminal to receive alarms, see "Terminals" on page 4.2.

Prerequisites

The following Picture Perfect forms are prerequisites:

Form	Purpose
PRINTER ROUTINGS	To log alarms to a printer and to display on the Alarm Monitor.
INPUT GROUPS INPUTS	To allow inputs to activate (as groups) when an alarm condition occurs.
ROUTE DEFINITIONS ROUTE POINTS	To allow area activity monitor routing for individual alarms.

What You Will Be Doing

This chapter shows you how to write instructions and responses for an alarm using the **Messages** and **Responses** forms, and how to set up an alarm.

To get ready to configure alarms using Picture Perfect forms, first plan your alarms on paper. Use your worksheets to document alarm locations (inputs), input groups, output devices, and alarm priorities.

Alarm Instructions

Use the **Messages** form (Figure 8-1) to write alarm instructions that will display when the various alarms occur, and when they reset. Keep in mind that the same alarm may occur at different times of the day or week. Your instructions (who to call, who to dispatch) may change depending on the shift. These alarm messages appear in a picklist that is used in the **Alarms** form.

Setup

➤ **To create alarm instructions:**

1. Select **Messages**, then **Messages**.
2. Click **New**.
3. Complete the **Messages** form. For a description of each field, see “The Messages Form” on page 8.3.
4. Click **Save**.
5. Click **New** to create another alarm instruction.

The Messages Form

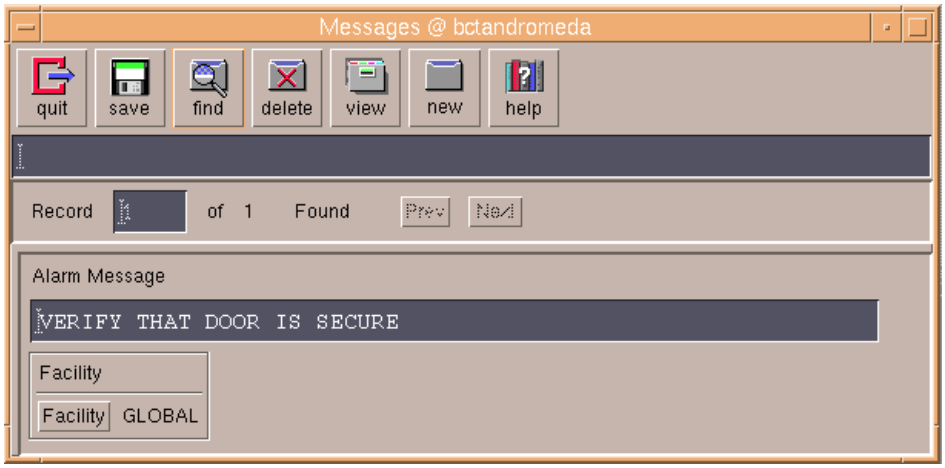


Figure 8-1. Messages Form

Alarm Message

Type an alarm instruction for the operator to follow (up to 60 alphanumeric characters). You can assign up to five messages to each alarm. Write generic messages that are common to most of your alarms. For example, a forced-door alarm on a perimeter door should use a generic alarm instruction such as **`FORCED DOOR - SEND SECURITY GUARD`**, and a response message such as **`GUARD DISPATCHED`**.

Facility

Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

Alarm Responses

Use the **Responses** form (Figure 8-2) to write alarm responses that the operator can select when responding to an alarm. The system allows the operator to enter multiple responses to each alarm.

Create at least one response message that is appropriate for all alarms. For example, **`ALARM ACKNOWLEDGED`**.

Setup

➤ **To create alarm responses:**

1. Select **Messages**, then **Responses**.
2. Click **New**.
3. Complete the **Responses** form. For a description of each field, see "The Responses Form" on page 8.4.
4. Click **Save**.
5. Click **New** to create another alarm response.

The Responses Form

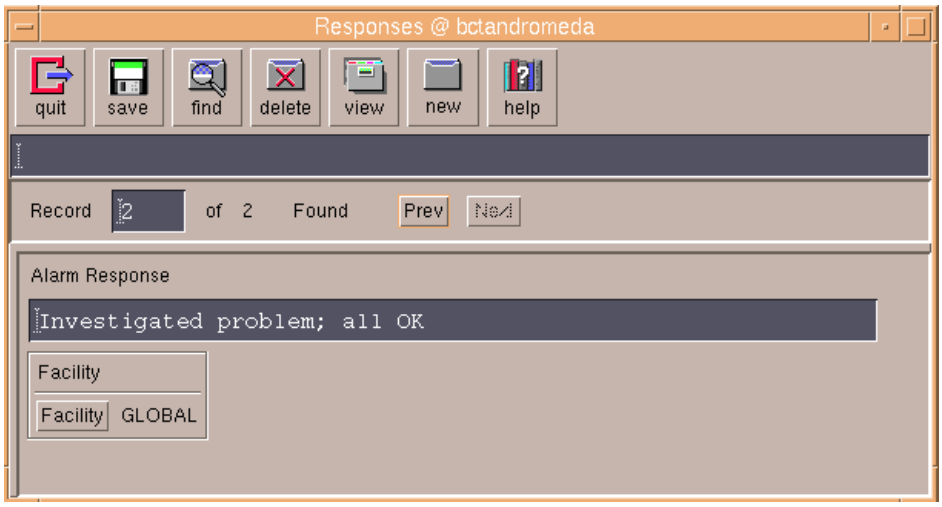


Figure 8-2. Responses Form

Alarm Response

Type an alarm response for the operator to use (up to 60 alphanumeric characters). These alarm responses appear in a picklist that is used

when the operator responds to an alarm. When the operator selects a response, the response and the alarm event automatically route to the log. Pre-written responses save time, but if none of the responses on the picklist are appropriate, the operator can type a unique alarm response.

Facility

Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

Alarms

Use the **Alarms** form to define each alarm—both physical alarms (such as door forced open) and logical alarms (such as invalid badge). Define the alarm priority, whether or not it can be scheduled, how the alarm inputs and outputs reset, where it is routed, and which alarm instructions display when the alarm occurs. These entries form a picklist that is used in the **Input Groups** form, where alarms are assigned to a specific input group. (See "The Input Groups Form" on page 9.4.)

Setup

➤ **To define an alarm:**

1. Select **Devices**, then **Alarms**.
2. Click **New**.
3. Complete the **Alarms** form. For details on completing each field, see "The Alarms Form" on page 8.6.
4. Click **Save**.
5. Click **New** to add another alarm.

The Alarms Form

The following is a list of fields that may require additional information for you to complete. The list is in the order that the fields appear on the form. There is no required sequence for you to follow.

Refer to Figure 8-3 for the **Alarms** form.

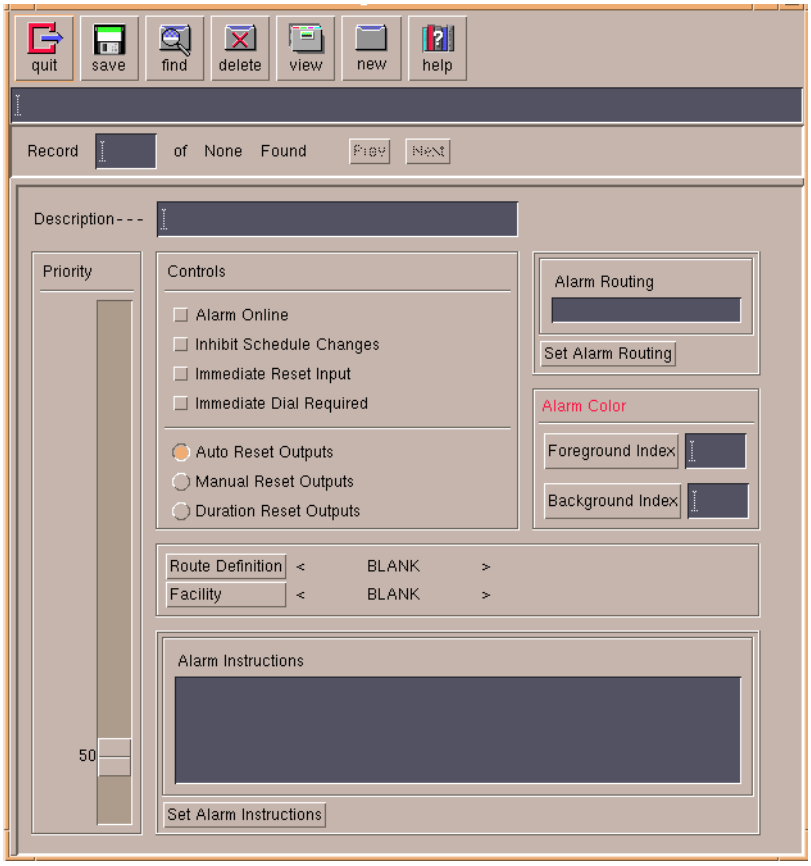


Figure 8-3. Alarms Form

Description

Type a description for this alarm (up to 30 alphanumeric characters).

Priority

Select an alarm priority so that when several alarms occur simultaneously, this alarm displays in order of priority. Highest priority is 1 and lowest is 500. Slide the scroll bar until the number you want to select appears. You may also use the up arrow / down arrow keys to increase or decrease the priority level.

NOTE

One strategy is to leave gaps between the priority numbers so that when you add alarms later, you will not have to re-assign priorities among the existing alarms. The same priority number can be assigned to more than one alarm.

Controls

This box contains two lists. The first list has toggle buttons that allow multiple selections. Select any or all of the following options:

Alarm Online
Toggle this button **On** if you want this alarm to occur when an associated Input Group is activated.

NOTE

Do not click this button until the alarm is ready to be brought online.

Inhibit Schedule Changes
Toggle this button **On** if you want to inhibit schedule changes for this alarm. Otherwise, the system implements alarm schedules created using the **Alarm Events** form.

You may want to inhibit schedule changes for an alarm if no schedules yet exist for alarms, or if you are not ready to implement the schedules you have created.

Immediate Reset Input
Toggle this button **On** if you want the system to reset this alarm as soon as an associated input group triggers this alarm.

Only “Logical” alarms, such as invalid, suspended, unknown, or lost badges, must have this button **On**, as there is no reset condition for this type of alarm.

Immediate reset allows the operator to remove (clear) an alarm without waiting for the reset condition.

Immediate Dial Required
This button is used for dial-up micros only. Toggle this button **On** if you want the associated micro to dial the host immediately when this alarm condition occurs. See “Example of Direct Communication - Uni-directional Micros” on page 10.4 of Chapter 10 - Micros for information on configuring micros for this ability. If you toggle this button **On** for a direct connect micro, it will ignored.

The second **Controls** list has radio buttons that allow only one selection. Select one button to define how associated outputs reset.

Auto Reset Outputs
Click this button to allow the system to automatically reset any output groups associated with this alarm (when the input resets). The system resets any devices (lights, sirens, etc.) operated by outputs in an output group.

For example, you may decide to use an auto reset for an output device (such as a camera) that requires toggling on or off.

NOTE

See “Outputs Form with Micro and Output Group Picklists” on page 12.8 and “Reset on Input” on page 12.8.

Manual Reset Outputs
Click this button to require an operator to manually reset any outputs associated with this alarm. The system resets any devices associated with the alarm. Any devices (lights, sirens, etc.) operated by outputs stay on until manually reset.

For example, you may decide to use a manual reset for a motion sensor that activates floodlights in a parking lot. The manual reset requires the operator to turn the output off using the **Output** button on the **Alarm Response** window.

Duration Reset Outputs
Click this button to allow the system to reset any outputs associated with this alarm when the *output duration time* elapses. Any devices (lights, sirens, etc.) operated by outputs stay on for the duration time (set on the **Outputs** form).

For example, you may use a duration reset for an alarm that triggers flood lights to go on. The time duration can be set for the maximum amount of time required to implement the alarm instructions.

NOTE

See “Outputs Form with Micro and Output Group Picklists” on page 12.8 and “Reset on Input” on page 12.8.

Both the **Alarms** form and the **Outputs** form define reset methods for outputs. Output resets can be overridden as follows:

- A **Manual Reset** of an output overrides any other reset method that is defined for that output. For example, if the **Outputs** form specifies **Reset On Duration** for an output, but the **Alarms** form assigns it **Manual Reset**, the **Manual Reset** overrides.
- A **Duration Reset** overrides an **Auto Reset** defined for an output. For example, if the **Alarms** form specifies **Auto Reset** for an output, but

the **Outputs** form assigns it **Reset On Duration**, the **Duration Reset** overrides.

- A **Duration Reset** overrides a **Reset On Input** for an output. If the **Outputs** form defines a **Reset On Input** for an output, but the **Alarms** form assigns it **Duration Reset**, the **Duration Reset** overrides.

Route Definition

The selected monitor routing is displayed here. Click the **Route Definition** button to display the **Route Definitions** picklist. This picklist allows the operator to specify a route definition from the **Route Definitions** form to route alarms to specific monitors. If this field is left blank, this alarm will be routed to all terminals.

Facility

Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

Alarm Instructions

The selected **Alarm Instructions** for this alarm are displayed here. The selected messages will appear as instructions to the operator on the **Alarm Monitor** when this alarm is activated.

Click the **Set Alarm Instructions** button to display a picklist. Select up to five alarm instructions, then click **Ok**. See Figure 8-4. Alarms Form with Color Palette, Alarm Instructions, and Alarm Routing Picklist on page 8.10.

Alarm Routing

The selected alarm routing is displayed in the **Alarm Routing** picklist (Figure 8-4).

Click the **Set Alarm Routing** button to display the picklist. Select one alarm routing, then click **Ok**.

NOTE

The Monitor should always be included in the routing choice of an alarm. If an alarm is not routed to the Monitor, the operator cannot respond to the alarm.

Alarm Colors

The **Alarm Color** box of the **Alarm** form will appear only if you have selected **Alarm Description** in the **Alarm Monitor Color Scheme** box

of the **Parameters** form. This box contains the **Foreground Index** and **Background Index** buttons. Refer to Figure 8-4 for the color palette.

Foreground Index
Click the **Foreground Index** button to display a palette of colors. Select the desired color for the text of the alarm message that will be displayed on the **Alarm Monitor**.

Background Index
Click the **Background Index** button to display a palette of colors. Select the desired color for the background of the alarm message that will be displayed on the **Alarm Monitor**.

When finished using the palette, click **Ok**.

After you have made your selections, the **Alarm Color** field will display the colors you have chosen for this alarm.

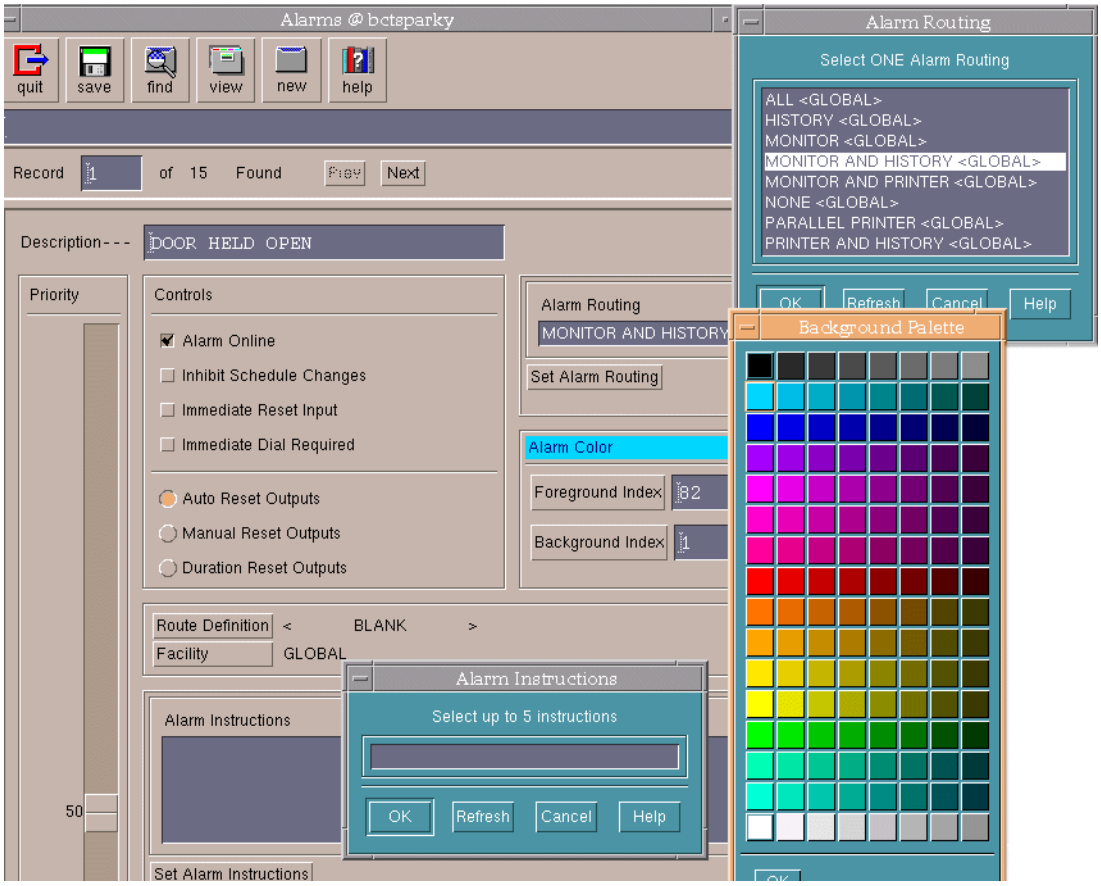


Figure 8-4. Alarms Form with Color Palette, Alarm Instructions, and Alarm Routing Picklist

Alarm Color, Processing State

It is possible to define the colors that will be used in the **Alarm Monitor** so that the color scheme reflects the alarm state. Each alarm in the **Alarm Monitor** will have a foreground and background color based on its processing state and logical state. This option will be used if **Processing State** is selected in the **Alarm Monitor Color Scheme** box of the **Parameters** form.

Setup

➤ **To set Processing State colors:**

1. Select **Control**, then **Alarm Color**.
2. Use the color palette or type a numeric value in each box to indicate the color desired. Numeric values range from 0 to 127. The same color palette shown in Figure 8-4 is used for this setting.
3. Click the **Save** function button to save the settings.
4. Click the **Quit** function button to close the **Alarm Color** window.

Once these changes are made, the next alarm that comes in will have the new colors.

The Alarm Color Form

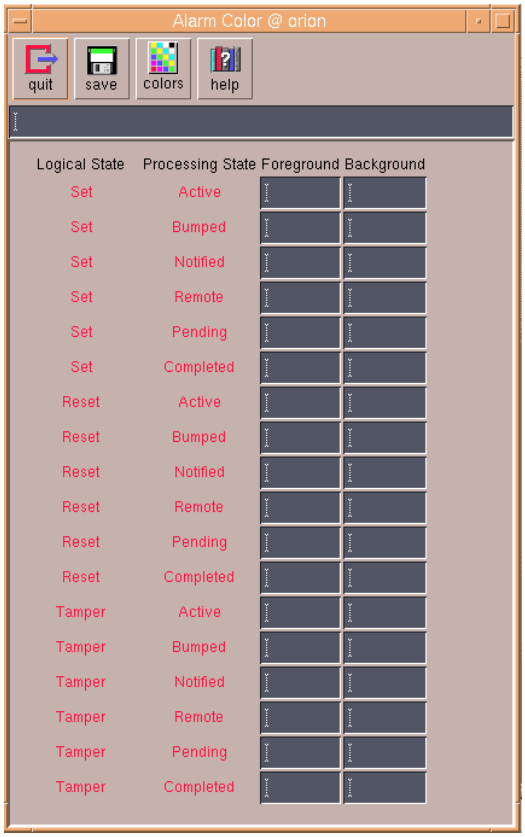


Figure 8-5. Alarm Color Window

The **Alarm Color** window is used to set foreground and background colors for each possible combination of alarm logical and processing states. The logical states are: **Set**, **Reset**, and **Tamper**. The processing states are: **Active**, **Bumped**, **Notified**, **Remote**, **Pending**, and **Completed** and are defined as follows:

Active

Alarms that are not yet acknowledged.

Bumped

Alarms received by the alarm monitor (a specific terminal) that are not acknowledged in a defined amount of time, and are sent to another terminal defined by the user.

Notified

Used by NAN (Network Alarm Notification) alarms that are received by the alarm monitor (on a subhost), but are not acknowledged in a

defined amount of time, and are forwarded (through a pop-up login screen) to a pre-defined terminal.

Remote

Used by RAN (Remote Alarm Notification) alarms that are received by the alarm monitor, but are not acknowledged in a defined amount of time, and are forwarded to a configured remote non-Picture Perfect system.

Pending

Alarms that are acknowledged but not removed.

Completed

Alarms that are removed (still displayed on the monitor), waiting for a physical reset.

NOTES

Input and Output Groups

Chapter 9

Overview

The Picture Perfect system monitors digital inputs (DIs) for contacts and drives digital outputs (DOs) for controlling output devices.

Outputs are triggered when associated inputs activate an input group. Outputs can operate devices such as door strikes, bells, and lights.

Input groups trigger output groups when the system detects the inputs as "true". Inputs may be physical connections to a microcontroller (micro) or logical events such as a transaction buffer overflow or an invalid access attempt.

Prerequisites

The following Picture Perfect forms are prerequisites:

Forms	Purpose
ALARMS	To allow Input Groups to be assigned to alarms.
ROUTE DEFINITIONS ROUTE POINTS	To allow area activity monitor routing for DIs.

What You Will Be Doing

This chapter shows you how to add (or change) output groups and input groups.

Output groups and input groups include description fields that describe the function or effect of the record. The description becomes part of the transaction message, telling the monitoring operator what happened and where. One part of this description may include non-technical language for operator information, and the other part may include a wiring location.

Output Groups

Before you define individual outputs, you must create output groups to which individual outputs can be assigned. When an output group triggers, all outputs assigned to the group activate. (An input group triggers one or more output groups.) Link selected outputs together by assigning the same output group to each output (on the **Outputs** form).

NOTE An output cannot belong to more than one output group; but more than one output can be assigned to one output group.

Refer to Figure 9-1 for the **Outgroups** form.

Setup

➤ **To add an output group record:**

1. Select **Devices**, then **Outgroups**.
2. Click **New**.
3. Complete the **Outgroups** form. For a description of each field, see "The Outgroups Form" on page 9.2.
4. Click **Save**.

The Outgroups Form

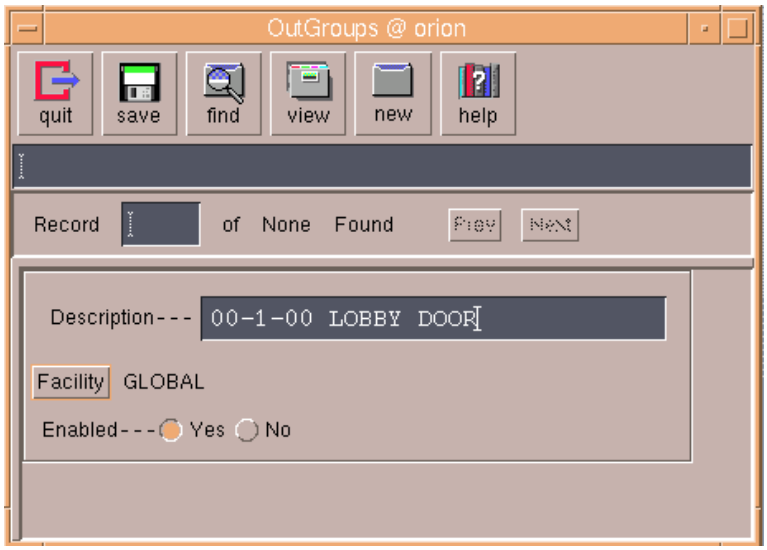


Figure 9-1. OutGroups Form

Description

Type a description for each output group (up to 30 alphanumeric characters). You can write descriptions for output group names to reflect how the outputs in the group function. For example:

```
001-0-01 FIRE OUTPUT DEVICE
```

```
001-0-02 PERIMETER SURVEILLANCE DEVICE
```

Facility

Click the **Facility** button to display the facilities picklist. By default, the output group record will be assigned the same facility as the micro to which the door is assigned however, you do have the ability to manually re-assign an output group's facility. This might be desirable in a case where one micro controls more than one facility, for instance two companies occupying the same building that use separate doors for entry / exit. For more information, see Chapter 5 - Facilities and Facility Profiles.

Enabled

Select **Yes** to allow this output group to activate when triggered by an input group,

Select **No** to prevent the outputs in this output group from activating when triggered by an input group.

Input Groups

Before defining individual inputs, you must create input groups to which individual inputs can be assigned. Input groups trigger output groups when all or any of the inputs assigned to the group are detected. Input groups are needed for physical inputs such as readers and sensors and for logical events determined by the system or micro.

Logical Input Events for a micro are:

- Badge History Overflow
- Alarm History Overflow
- Upstream Communication Failure
- Downstream Communication Failure
- Reader Communication Failure

Logical Input Events for an area are:

- Invalid Badge
- Unknown Badge
- Lost Badge
- Suspended Badge
- Antipassback Violation
- Duress

Logical Input Events for a door are:

- Door Held Open
- Door Forced Open
- Door Pre-alarm

Setup

➤ **To add an input group:**

1. Select **Devices**, then **Ingroups**.

2. Complete the **Ingroups** form for each input. Define how the input group activates--whether a single input in the group activates the group or if all inputs in the group must activate to trigger the group. For additional information on each field, display the online **Help** form or see "The Input Groups Form" on page 9.4.

3. Click **Save**.

4. Click **New** to add another input group.

The Input Groups Form

The following is a list of fields on the **Input Groups** (**Ingroups**) form. The list is in the order that the fields appear. There is no required sequence to follow.

Refer to Figure 9-2 for the **Ingroups** form.

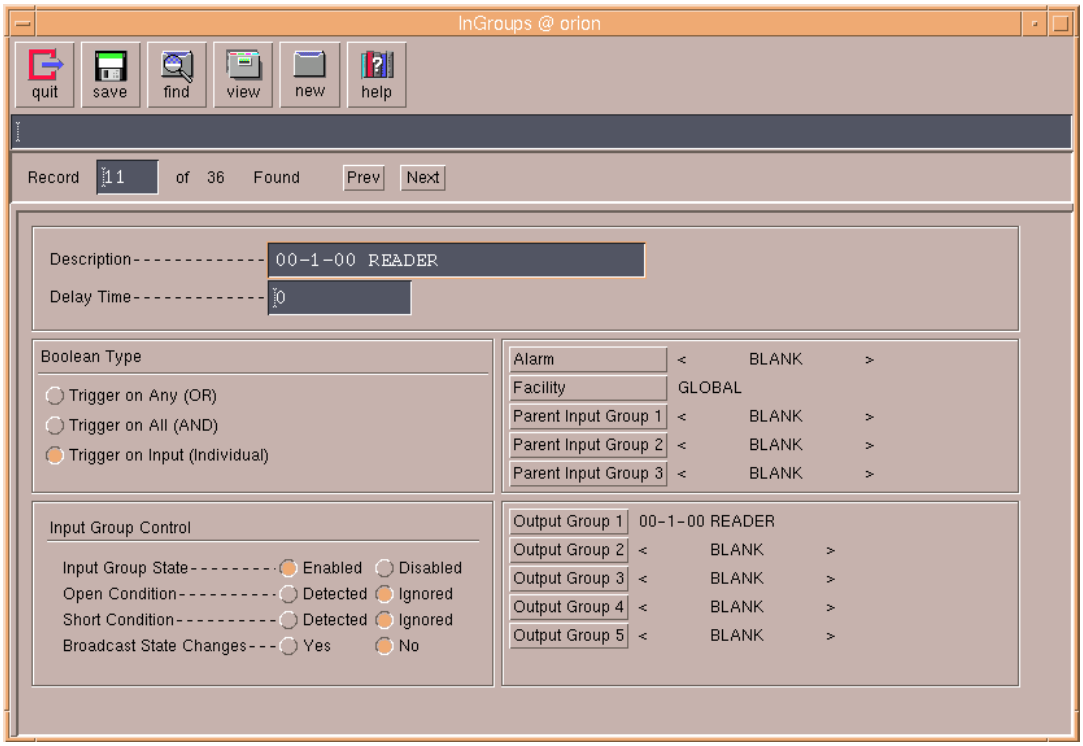


Figure 9-2. InGroups Form

Description

Type a **Description** of the **Input Group**, usually including a wiring address.

Delay Time

Type the number of seconds an input must be true (**On State** or **Change State**) before the input group is true. This delay helps avoid false input detections.

NOTE

The **Off To On Delay Time** and **On To Off Delay Time** set on the **Inputs** form overrides the **Delay Time** set on the **Ingroups** form.

Set **Delay Time** to zero for any input group assigned to an exit pushbutton

Boolean Type

Boolean refers to an *any* or an *all* condition. If the specified any or all condition occurs, an input group will change its state.

In the *any* scenario, an input group will change its state if any of its inputs are activated. This one is very flexible. In the *all* scenario, an

input group will change its state only if all of its inputs are active at the same time. This one is very rigid.

For example, a building contains three smoke detectors (one on each floor), and all three of these inputs go to one Fire Emergency input group. A fire breaks out on the ground floor. If this input group is set up with the any condition, the input group will change state and activate the alarm as soon as the first floor's smoke detector is activated. If this input group is set up with the all condition, the input group will change state and activate the alarm only after all three smoke detectors have been activated. This input group will activate an alarm, and will trigger an output group, which will activate a siren and warning lights.

A non-boolean input group is also available. This is an individual input group that activates each time one of its inputs changes state. To the system, this input group is transparent, because the *message sent* by this input group actually reflects the description of the *input* itself, not the input group. Logical alarms must always use a non-boolean input group.

NOTE

In both single input groups and in a hierarchy of input groups, all inputs in any given group or hierarchy must be associated with the same micro.

Only **Trigger on Input** (Individual) input groups which are non-boolean appear on the **Input Group** picklists of the **Readers**, **Areas**, **Doors**, and **Micros** forms.

Select one of the following radio buttons:

Trigger on Any
Click this radio button if you want the **Input Group** to change state when any of its inputs are activated (Boolean).

Trigger on All
Click this radio button if you want the **Input Group** to change state only when all of its inputs are activated (Boolean).

Trigger on Input
Click this radio button if you want the **Input Group** to pass along information that one of its inputs has changed state. Logical alarms must always use **Trigger On Input** (Non-Boolean).

Input Group Control

Specify the settings for each of the following:

Input Group State
Select **Enabled** to allow this input group to activate. Select **Disabled** if this input group should not activate.

Open Condition
Select **Detected** to allow this input group to trigger associated outputs when the input group detects an open-condition state change. This field is for supervised input. Select **Ignored** if this is not a supervised input.

Short Condition
Select **Detected** to allow this input group to activate associated outputs when the input group detects a short-condition state change. This field is for supervised input. Select **Ignored** if this is not a supervised input.

Broadcast State Changes
Select **Yes** to broadcast any input state changes in this input group to all micros on the system. Only select **Yes** if you want the inputs in this input group to trigger outputs on other micros. Normally this is set to **No**.

Alarm

Displays a description of the selected alarm (if any) associated with this input group.

Click the **Alarm** button to display the **Alarm** picklist (Figure 9-4). Select the desired alarm, then click **Ok**. When this input group activates, the selected alarm triggers.

Facility

Click the **Facility** button to display the facilities picklist. By default, the input group record will be assigned the same facility as the micro to which it is assigned however, you do have the ability to manually re-assign an input group's facility. This might be desirable in a case where one micro controls more than one facility, for instance two companies occupying the same building that use separate doors for entry / exit. For more information, see Chapter 5 - Facilities and Facility Profiles.

Parent Input Group

Displays a description of the selected parent input groups (if any) associated with this (child) input group. Click a **Parent Input Group** button to display the **Parent Input Group** picklist, which is a list of input groups (Figure 9-4), and select an input group to be the parent for this child. You can select up to three parent input groups for a (child) input group.

An input group that is connected to a parent input group becomes, in essence, an input of that parent input group, and is subject to the

parent's boolean or non-boolean settings. (See "Boolean Type" on page 9.5.)

Each input group can have up to three input groups as its parents, and each input group can be the parent of any number of input groups. An input group cannot be its own parent.

A tree-like hierarchy of input groups can be built, with each input group propagating its state changes on to its parent input group. Do not create a circular hierarchy, such as A is a parent of B, and B is a parent of A.

NOTE

In both single input groups and in a hierarchy of input groups, all inputs in any given group or hierarchy must be associated with the same micro.

An input group's alarm and output groups are not affected by its association with a parent. They will all work independently.

Example of a Parent Input Group: A high-security vault is equipped with three motion detectors, yet a security guard is required to patrol the vault periodically. Any one of the motion detectors must be able to activate an alarm, but the alarm must be disabled during the patrol. This scenario can be resolved as follows (refer to figure 9-3 on page 9.10):

- Have the three motion detectors (inputs 1, 2, and 3) go into a *Motion* input group. This input group would have a boolean type of any, so any single motion detector could activate this group.
- Assign *Motion* the Parent Input Group of *Vault*. No alarms or outputs will be associated directly with *Motion*.
- Assign *Vault* the appropriate alarm and Output Groups desired for motion being detected in the vault area, and assign it a boolean type of all.
- Associate a toggle reader (see "Toggle" on page 13.28 of Chapter 13 - Categories, Areas, Readers, and Doors) with an input group called *Control*. The toggle reader will be the only input in this group. *Control* will be a Trigger on Input (Individual) input group which is non-boolean, so a badge swipe through this reader will toggle the Input Group's state on or off.
- Assign *Control* the Parent Input Group of *Vault*. No alarms or outputs will be associated directly with *Control*.
- *Vault's* only inputs are its child input groups, *Motion* and *Control*. Both of these must be activated in order to trigger the alarm, since *Vault's* boolean type is all.

- When the vault is unpatrolled, the toggle reader is used to toggle-on *Control*, meaning that this input group is activated. If any of the three motion detectors should activate, the *Motion* input group will be triggered (since its boolean type is any). The *Vault* input group will then receive the activated state change of *Motion*. When that happens, the all condition of *Vault* has been met, and the associated alarm and output groups will be triggered.
- To deactivate the motion-detector alarm during a routine patrol, the security guard simply swipes their authorized badge through the toggle reader. *Control's* input is deactivated; therefore, the *Vault* input group cannot trigger an alarm, even though the motion detectors will activate the *Motion* input group while the guard is in the area. When the patrol of the vault is finished, the guard swipes their badge through the toggle reader again, this time to activate it.

Output Groups

Displays a description of the selected output group associated with this input group.

Click an **Output Group** button to display the **Output Groups** picklist (Figure 9-4). Select up to five output groups (one for each button), then click **Close**. When this input group activates, all of the selected output groups trigger.

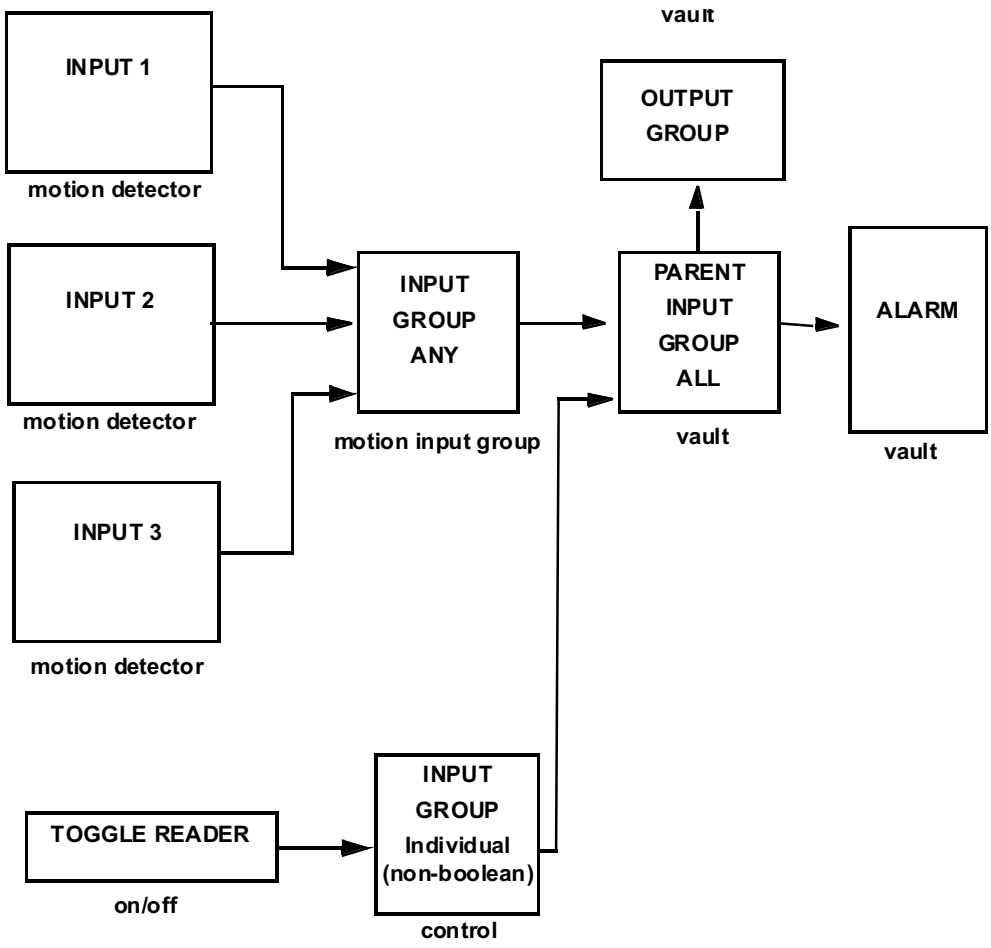


Figure 9-3. Example of a Parent Input Group

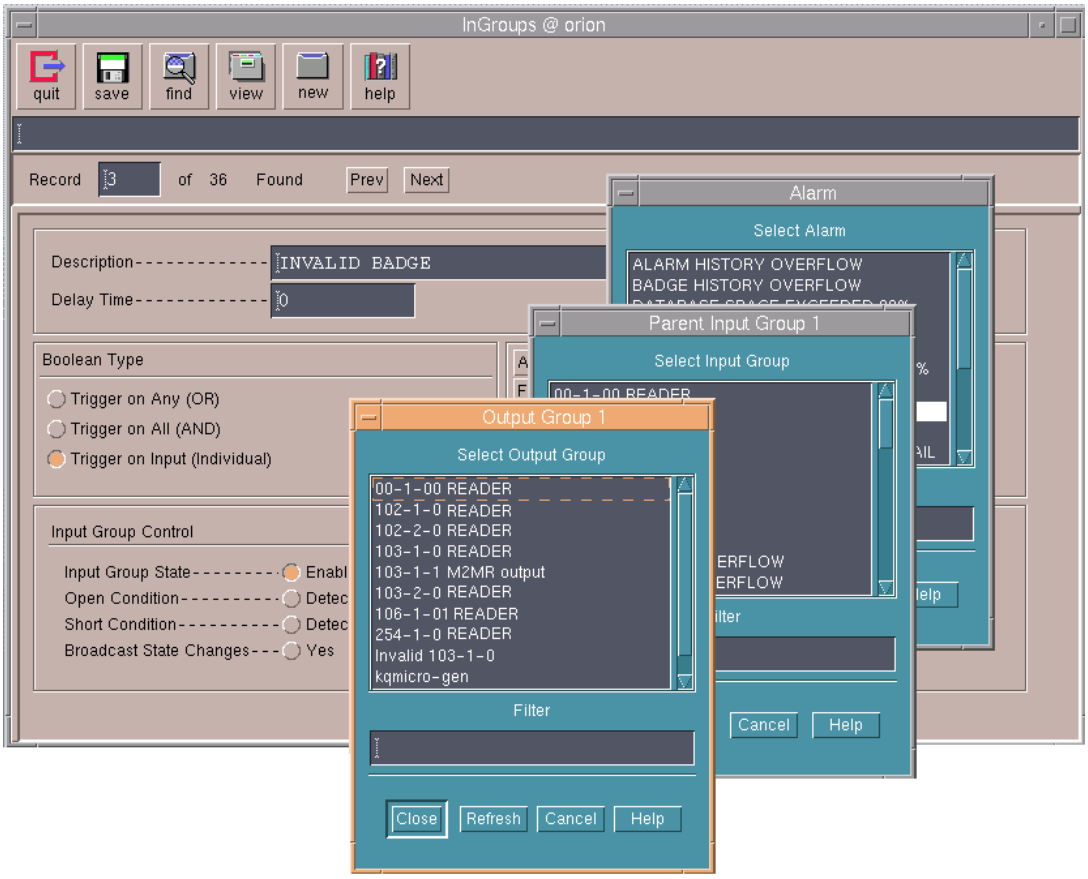


Figure 9-4. Input Groups Form with Picklists

NOTES

Micros

Chapter 10

Overview

Each microcontroller (micro) controls specific input and output devices, such as readers, doors, and alarms. For the micro to work correctly, you must define communication-port characteristics such as communication retries, polling interval, port assignment, and micro address. (The micro address set in the software must match the micro address in the hardware.) Several Picture Perfect forms are used in these configurations.

Picture Perfect supports Dynamic Configuration; that is, micros can be configured without having to restart the Picture Perfect system or the micro. However, there are some rules that must be met which will be discussed later in this chapter.

Prerequisites

The following Picture Perfect forms are prerequisites:

Forms	Purpose
MODEMS	To allow modems to be associated with micros.
PORTS	To allow a serial-port to be assigned to a micro.
NETWORK PORTS	To allow a network-port to be assigned to a micro.
ALARMS	To allow alarms to be associated with a micro's input groups.
INPUT GROUPS	To allow input groups to be associated with each micro error condition so that these conditions can trigger an alarm and/or output groups.

What You Will Be Doing

This chapter shows you how to:

- ❒ Configure the micro for dial-up and network communications, using the **Ports** form and the **Network Micro Ports** form.
- ❒ Associate micro error conditions with input groups and link them to the micro, using the:
  - **Alarms** form to configure the micro alarm that you want to appear in the picklist in the **Ingroups** form.
  - **Outgroups** form to configure the output group you want activated when the alarm occurs.
  - **Ingroups** form to configure the input group so that it is available in a picklist on the **Micros** form. Also, use the **Ingroups** form to assign an alarm or an output group to the input group.
- ❒ Adding or changing the micro, using the **Micro** form.

A block diagram of the forms necessary to complete the **Micros** form is shown in Figure 10-1.

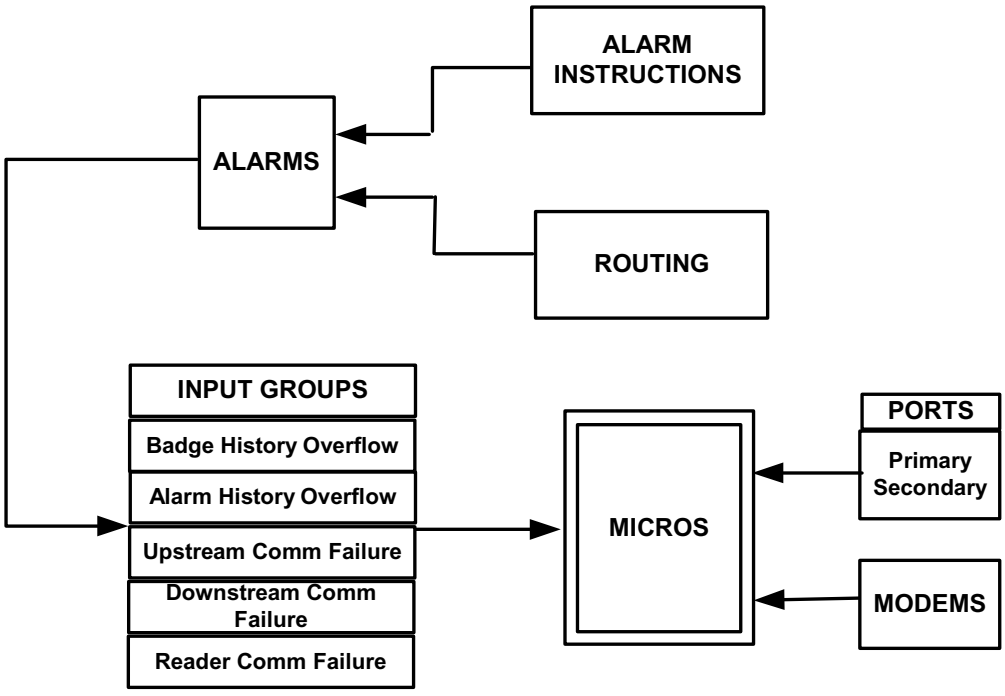


Figure 10-1. Common Micro Setup

Configuring Micro Communications

Picture Perfect supports three kinds of micro communications: direct, dial-up and network. All three types of communications can be combined on a single host. The following sections discuss:

- How to configure the ports required to connect the micros to the host.
- How to configure micros using direct communication.
- How to configure micros using dial-up communication.
- How to configure micros using network communication.

Ports

See “The Ports Form” on page 4.11 for a description of how to configure ports for direct (uni-directional and bi-directional) micro communications or for dial-up micro communications. Ports configured using the **Ports** form are then available on a **Ports** picklist for assignment to micros.

See “The Network Micro Ports Form” on page 4.16 for a description of how to configure ports for network micro and firewall communications. Ports configured using the **Network Ports** form are then available on a **Ports** picklist for assignment to micros.

Direct Communications Micro

A direct communications micro requires direct connection to the host. Communication can be uni-directional as in Figure 10-2 or bi-directional as in Figure 10-3.

NOTE Micro/2s are not supported downstream from a Micro/5-P.

In uni-directional communication, each line of micros is connected to the host from a unique port (For example, Micro 0 through 3 are connected to tty1; Micro 4 through 5 are connected to tty2). If communication is lost between downstream micros, the host continues to communicate only with those micros upstream from the break. An alarm is generated, indicating the loss of communication. For example, if a break occurs between Micro 1 and 2, the host will only have communication with Micro 0 and 1 from tty1, and it will maintain communication with Micro 4 and 5 from tty2. Communication with Micro 2 and 3 is lost.

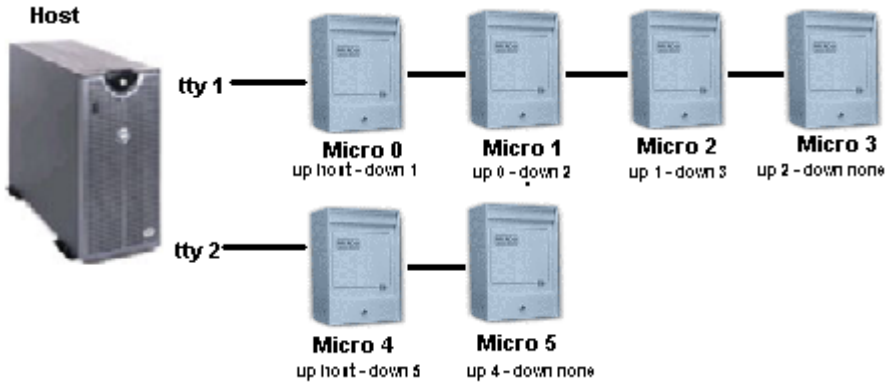


Figure 10-2. Example of Direct Communication - Uni-directional Micros

In bi-directional communication, the micros are connected to the host using a primary port at one end (tty1) and an alternate port at the other end (tty2). If communication is lost between any micros, the host will communicate from the primary port to all micros upstream from the break and from the alternate port in the opposite direction, to all micros upstream from the break. Using this method, communication with all micros is maintained. For example, if a break occurs between Micro 1 and 2, the host will communicate with Micro 0 and 1 from tty1, and it will communicate with Micro 3 and 2 from tty2. No communication is lost.

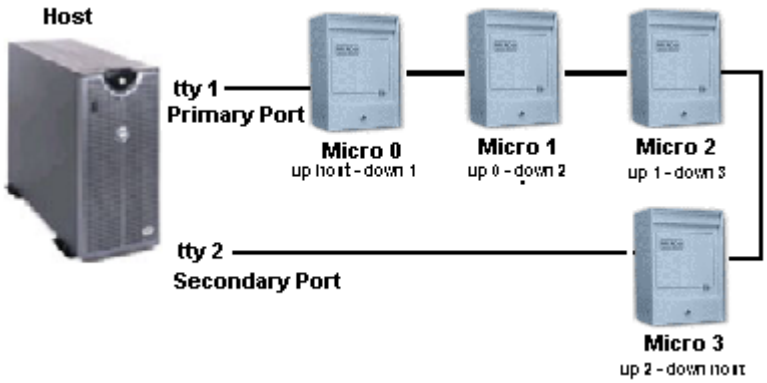


Figure 10-3. Example of Direct Communication - Bi-directional Micros

Dial-up Micros

A dial-up micro requires an attached modem, a dedicated phone line, and one or more compatible modems attached to the host ports.

There is only one possible configuration for dial-up communication: uni-directional which is detailed in Figure 10-4. “Example of Dial-Up Communication” .

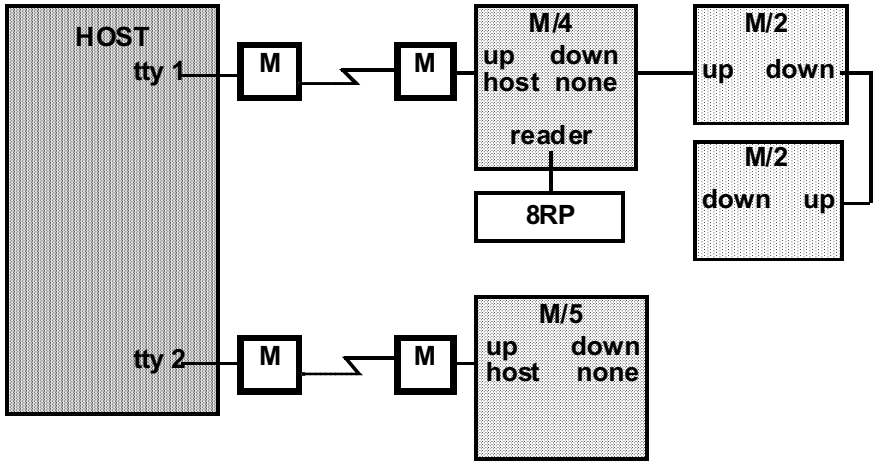


Figure 10-4. Example of Dial-Up Communication

The table below shows the micros that are supported downstream from dial-up micros.

Table 10-1: Dial-up Micro Downstream Support

Dial-up Micro	Downstream Support				
	Micro/2	Micro/4	Micro/5-P	Micro/5-PX	Micro/5-PX Network
Micro/4-P	Yes	No	No	No	No
Micro/5-P	No	No	No	No	No
Micro/5-PX	Yes[a]	No	No	Yes	No
Micro/5-PX Network with dial-up option[b]	Yes	No	No	Yes	No

a. Once you put a Micro/2 on this line, all micros downstream from this Micro/2 MUST be Micro/2s.

b. If the network connection fails and the micro has the dial-up option, it will behave as a dial-up Micro/5-PX after it connects to the host for the first time.

There are events that cause the micro to automatically dial up the host and there are events (usually operator activities such as updates or commands) that cause the host to automatically dial up the micro.

Events Requiring Micro-to-Host Calls:

Power-on Reset

After a power-on reset, the micro reads its DIP switch settings to determine its attached modem type and the required baud rate for communication to the modem, assumes that the modem is connected to the host port, and then tries to dial the host (using the modem's hard-coded phone number).

Alarm

The micro immediately dials the host when a priority micro alarm activates. Immediate Dial-Up is user-defined. See "Immediate Dial Required" on page 8.7.

Alarm and Badge Threshold

The micro dials the host when the micro's alarm or badge history buffer reaches its threshold (user-defined) and requires uploading to the host.

Badge Table Request

The micro dials the host when there is no micro database record for a badge just presented to a reader. The micro's resident database reduces the requirement for micro-to-host calls for badge records.

Events Requiring Host-to-Micro Calls:

Database Updates

The host dials out to send database updates to micros. Whether the host does this automatically, never, or on request is user-defined for each individual micro. For micros that do not require immediate updates, the host stores the updates until the next host-to-micro or micro-to-host call occurs and then downloads the new records.

Outputs and Output Group Commands

The host dials the micro immediately whenever the operator changes the state of an output or output group on that micro.

NOTE

For details that show how an operator can command state changes and control outputs using input groups, output groups, or selected outputs, see Chapter 29 - Controlling Outputs.

Operator-generated Commands

The host allows the operator to dial any micro in the system to check the status. See Chapter 30 - Viewing Status.

Micro Reset Request Command

The host dials the micro to send a reset command when an update to the system database requires major updates to one or more micro configurations.

The host dials the micro to send a reset request when an operator uses CMENU to reset a micro.

NOTE

Before the reset sequence starts, the micro terminates the call and disconnects to free the communications line; after reset, the micro dials the host to request its database and configuration

Micro Poll

The host can poll micros that have not communicated with the host for a user-defined time period. A zero Polling Interval setting tells the host that no polling is required. See “Polling Interval” on page 10.26.

Network Micros

A network micro requires an ethernet or token ring connection to the host. A network micro with the optional dial-up backup feature also requires a PCMCIA modem card in the other available slot, a dedicated phone line, and one or more compatible modems attached to the host port in addition to the network lines.

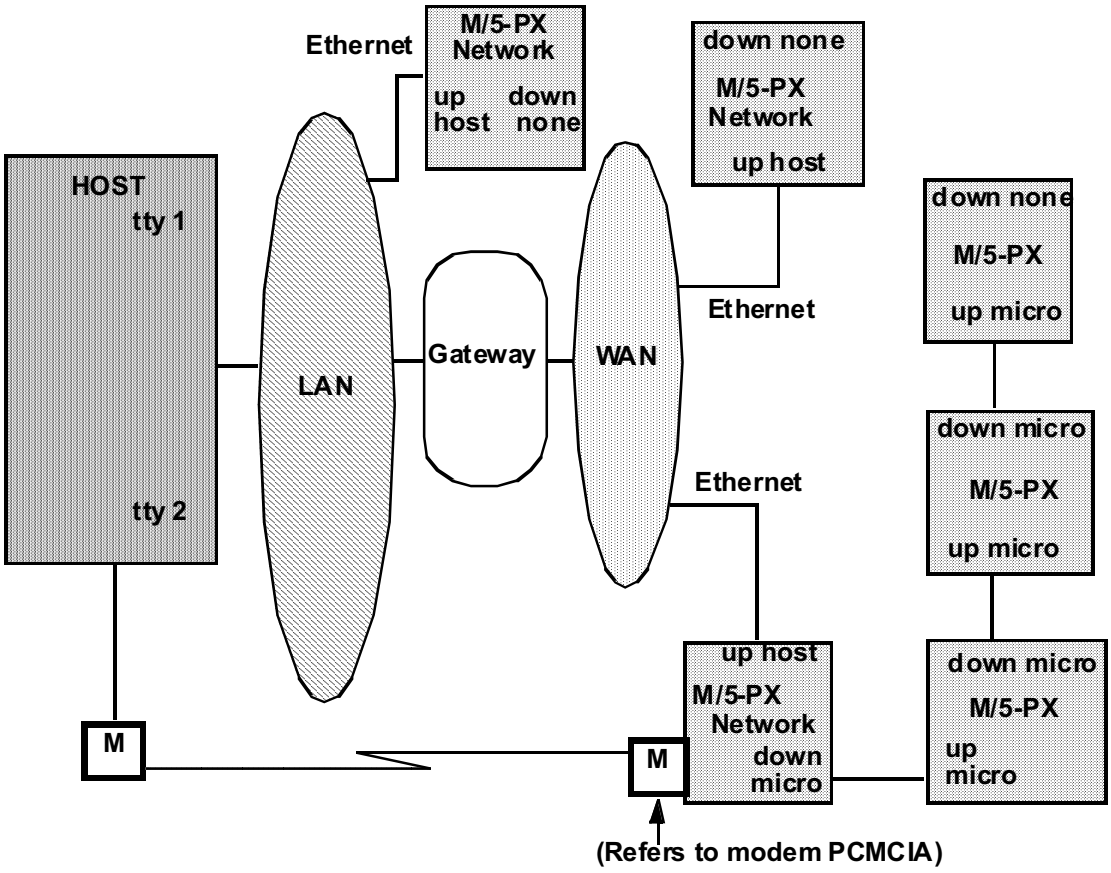


Figure 10-5. Sample Ethernet Configuration

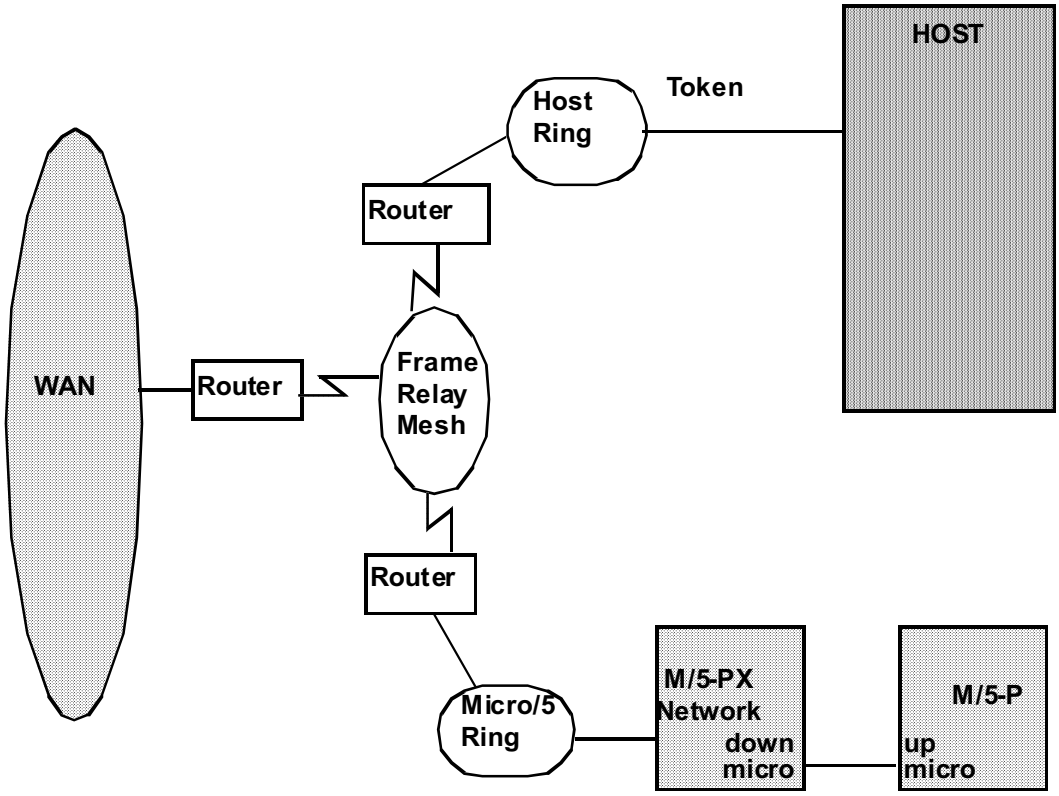


Figure 10-6. Sample Token Ring Configuration

Associating Micro Alarms and Output Groups with Input Groups

When a micro error condition occurs, an alarm message is generated. Each error condition alarm should be associated with an input group which can then trigger an associated output. For example, if communication is lost between two micros, a micro alarm is generated and the associated input group can activate an LED or a beep to alert the operator that communication is down.

The following sections will explain:

- How to define the micro error conditions as micro alarms.
- How to assign input groups to each micro error condition.
- How to have the input group trigger an output.

Creating Micro Alarms

Use the **Alarms** form to define each micro alarm used to notify you when micro-to-micro or host-to-micro communication problems occur. Define the alarm priority, how the alarm resets, where it is routed, and what alarm instructions display when the alarm occurs.

Each micro that has a downstream micro attached to it needs a unique micro-to-micro alarm.

One host-to-micro alarm can be used for each line of micros.

- Create the micro alarm messages. Select **Messages**, then **Messages** and complete the form. See “Alarm Instructions” on page 8.2 for details on how to complete this form.
- Create the micro alarm responses. Select **Messages**, then **Responses** and complete the form. See “Alarm Responses” on page 8.4 for details on how to complete this form.
- Create the micro alarms. Select **Devices**, then **Alarms** and complete the form. See “Alarms” on page 8.5 and “The Alarms Form” on page 8.6 for details on how to complete this form.

Create Input Groups for Micro Error Conditions

The **Input Groups** buttons on the **Micros** form are used to assign input groups to each micro error condition. The input groups for each micro’s error conditions must first be defined on the **Ingroups** form. See “The Input Groups Form” on page 9.4 for details on how to complete this form.

If any of these micro error conditions should trigger alarms, assign an alarm to that input group using the **Alarms** picklist on the **Ingroups** form.

If the alarm that you want is not configured on the **Alarms** form, it will not appear in the picklist.

Associate Outputs with Micro Error Condition Input Groups

To associate outputs with a micro error condition, use the **Outgroups** picklist on the **Ingroups** form. For example, if you select an output that operates an LED at a guard station, and link it to the micro's **Upstream Communication Failure Input Group**, then even if no alarm displays when upstream communication fails, the LED will still activate.

Adding or Change a Micro

Do not add or change a micro until you have configured the input groups that you need for the micro (to select from picklists in the **Micros** form) and until you have configured the alarm and output groups that you want to have associated with the selected input groups. See "Associating Micro Alarms and Output Groups with Input Groups" on page 10.10.

A micro can be configured in one of five ways:

- non-existent
- direct connect
- dial-up
- downstream dial-up
- network
- network dial-up

All of these options are explained in the sections that follow. However, each one can be configured as a nonexistent micro which means the micro does not need to be on the system to configure it.

Adding Micros

Non-existent Micros

To configure a micro as non-existent, the **Configure** field on the **Micro** form should have **Non-existent** selected.

Direct Connect Micros

For direct connect micros, ports must be configured before adding or changing a micro.

➤ **To add a direct connect micro:**

1. Select **Devices**, then **Micros**.

2. Complete the **Micros** form with special attention to the items below. See "The Micros Form" on page 10.18 for details on completing this form. The following fields must be set to the given value.

   - For the primary port, you must select a direct port.
   - For bi-directional micros, you must also select a secondary port which must be a direct port.
   - Click on the **Dial Up** button and select a modem type of **None**. Leave the remaining fields on this **Dial Up** screen blank.

3. Click **Save**.

4. To add another micro, click **New** or **Quit** to exit.

Dial-up Micros

For dial-up communication micros, modems and ports must be configured before adding or changing a micro.

➤ **To add a dial-up micro:**

1. Select **Devices**, then **Micros**.

2. Complete the **Micros** form with special attention to the items below. See "The Micros Form" on page 10.18 for details on completing this form. The following fields must be set to the given value.

   - Specify **None** for port assignment (primary and secondary), since dial-up micros call the host on any available port that is compatible (same modem type).
   - Click **Dial Up** and select the modem type of the host's modem. Complete the remainder of the **Dial Up** screen.

3. Click **Save**.

4. To add another micro, click **New** or **Quit** to exit.

Micros Downstream from Dial-up Micros

For micros downstream from dial-up communication micros, Ports must be configured before adding or changing a micro and the head-end dial-up micro must be configured.

Refer to Table 10-1 for a list of the type of micros that can be downstream.

➤ **To add a configuration for a micro that is downstream from a dial-up micro:**

1. Select **Devices**, then **Micros**.
2. Complete the **Micros** form and review the items that directly relate to direct connect micros. See "The Micros Form" on page 10.18 for details on completing this form. The following fields must be set to the given value.
   - Click **Dial Up** and select **None** on the **Callback** field. Then for the modem type, select **Downstream Dialup**.
3. Click **Save**.
4. To add another micro, click **New** or **Quit** to exit.

Network Micros

For network micros, network micro ports must be configured before adding or changing a micro.

➤ **To add a network micro:**

1. Select **Devices**, then **Micros**.
2. Complete the **Micros** form for each micro. See "The Micros Form" on page 10.18 for details on completing this form. The following fields must be set to the given value.
   - For the primary port, you must select a network micro port.
   - For the secondary port, you must select **None**.
   - Click on the **Dial Up** button and select a modem type of **None**. Leave the remaining fields on this **Dial Up** screen blank.
3. Click **Save**.
4. To add another micro, click **New** or **Quit** to exit.

➤ **To add a dial-up network micro:**

1. Select **Devices**, then **Micros**.
2. Complete the **Micros** form for each micro. See "The Micros Form" on page 10.18 for details on completing this form.
   - For the primary port, you must select a network micro port.

- For the secondary port, you must select **None**.
- Click **Dial Up** and select the modem type of the host's modem. Complete the remainder of the **Dial Up** screen.

3. Click **Save**.

4. Click **New** to add another micro or **Quit** to exit.

Changing Micros

Changing a micro is simply locating the record and changing the necessary fields. Keep in mind that if you change the port or modem setting, you may be changing the type of communications that this micro is using.

➤ **To change a micro configuration:**

1. Select **Devices**, then **Micros**.

2. Click **Find** to retrieve all the micro records or enter specific search criteria to limit the search and then click **Find**. Refer to page 3.9 for more information on using the **Find** button.

   You may want to review the section "What Type of Micro are You Changing?" on page 10.14, before you modify any of the information.

3. Change the information in the fields, as needed.

4. Click **Save**.

5. Click **New** to add another micro.

What Type of Micro are You Changing?

Before you modify a micro's configuration, you may want to check the initial settings. There are five fields on the **Micro** form that determine the type of micro communications being used: **Primary Port**, **Secondary Port**, **Upstream**, **Downstream** and **Modem Type**.

The table below shows what each field would contain according to the type of communications the micro is using. Also refer to Figure 10-7 on page 10.17.

Table 10-2: Determining the Type of Micro Communications

Type of Micro Communications		Primary Port	Secondary Port	Upstream	Downstream	Modem Type
Direct	Uni-directional	Direct Port	NONE	If a head of line micro: HOST Otherwise: anything but HOST	If an end of line micro: NONE Otherwise: anything but NONE or HOST	NONE
	Bi-directional	Direct Port	Direct Port	If a head of line micro: HOST Otherwise: anything but HOST	If an end of line micro: HOST Otherwise: anything but NONE or HOST	NONE
Dial-up		NONE	NONE	If a head of line micro: HOST Otherwise: anything but NONE or HOST	If an end of line micro: NONE Otherwise: anything but NONE or HOST	Anything but NONE or DOWNSTREAM DIALUP

Table 10-2: Determining the Type of Micro Communications (Continued)

Type of Micro Communications	Primary Port	Secondary Port	Upstream	Downstream	Modem Type
Downstream from Dial-up		NONE	Anything but NONE or HOST	If an end of line micro: NONE Otherwise: anything but NONE or HOST (Refer to Table 10-1, “Dial-up Micro Downstream Support,” on page“Dial-up Micro Downstream Support” on page 10.5.)	DOWNSTREAM DIALUP and the Callback field is set to NONE
Network	Network Port	NONE	If a head of line micro: HOST Otherwise: anything but HOST or NONE	If an end of line micro: NONE Otherwise: anything but NONE or HOST	NONE
Network Dial-up	Network Port	NONE	If a head of line micro: HOST Otherwise: anything but HOST or NONE	If an end of line micro: NONE Otherwise: anything but NONE or HOST	If a head of line micro: Anything but NONE or DOWNSTREAM DIALUP Otherwise: DOWNSTREAM DIALUP

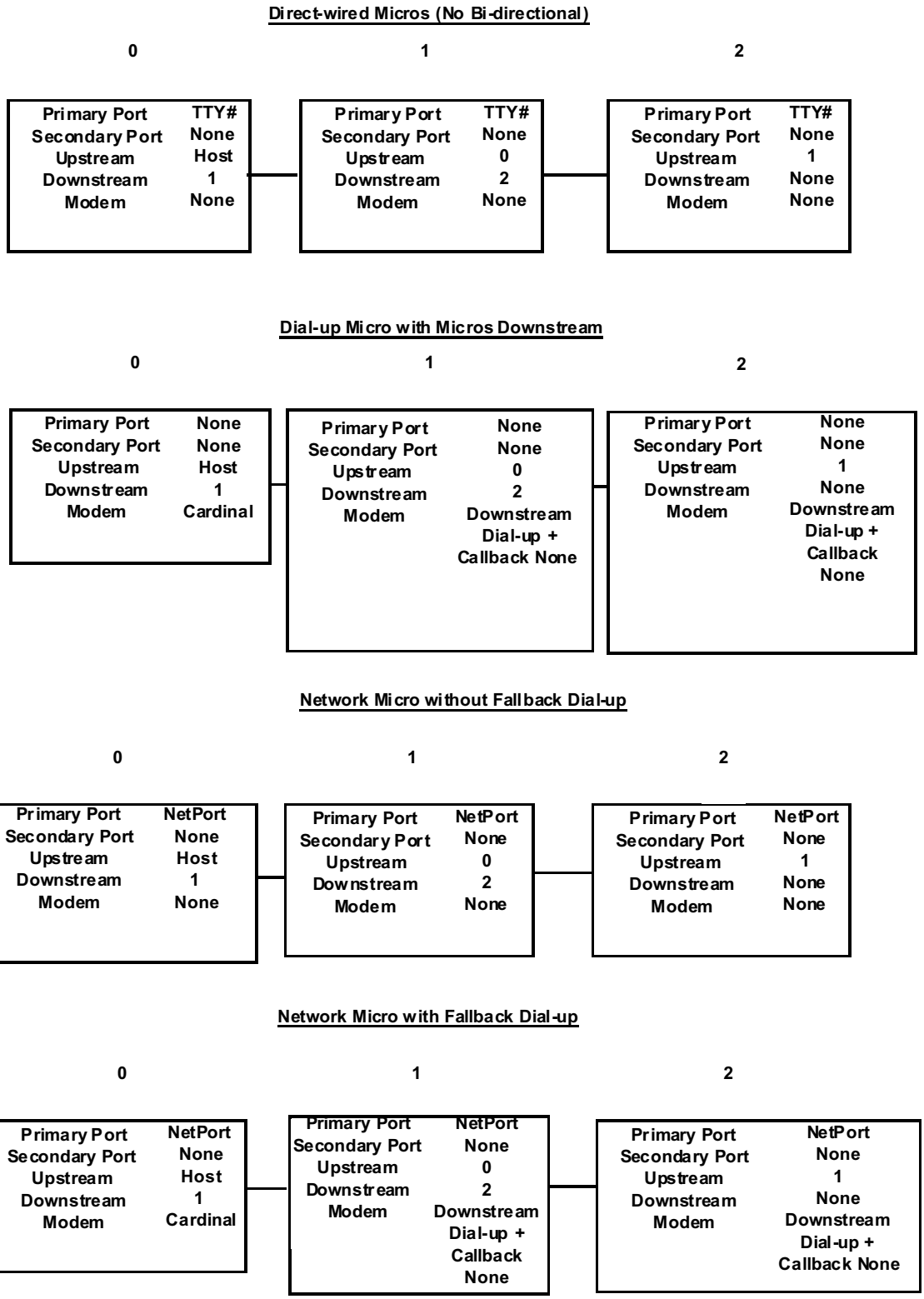


Figure 10-7. Micro Configuration

The Micros Form

Use the **Micros** form to identify the micro's address, modem, port, and upstream and downstream equipment, and to define how each micro operates and communicates.

The following is a list of fields that may require additional information for you to complete. The list is in the order that the fields appear on the form. There is no required sequence for you to follow. Refer to Figure 10-8 below for the top portion of the **Micros** form.

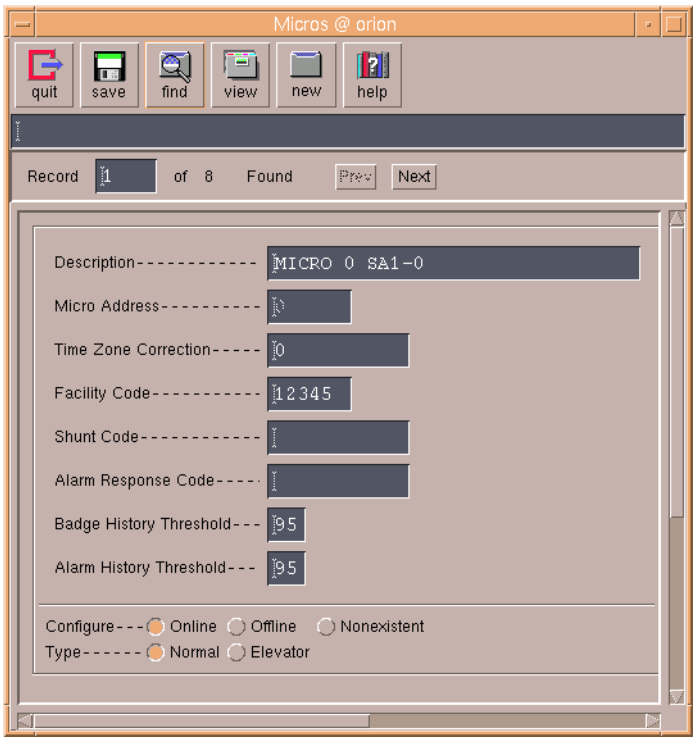


Figure 10-8. Micros Form (Top - Left)

Description

Type a micro description up to 30 alphanumeric characters long; for example, Building 1 Micro 0. This micro description appears in a **Micros** picklist for selection on the **Inputs**, **Outputs**, **Readers**, and **Generator** forms.

Micro Address

Type a number from 0 to 4095, which identifies the address of this micro as set in the micro's hardware-address switches. Once a micro's address is set, it cannot be changed.

Time Zone Correction

Optional: Currently, this field is used only by Access Vision. This field enables Access Vision workstations to display badge and alarm activity in the micro's local time by entering a time zone correction. The time zone correction is the number of hours the micro's time is different from the host's time. If the micro is west of the host, the time zone correction number must be preceded by a hyphen (**-**). If the micro is east of the host, the time zone correction number must be preceded by a plus sign (**+**). For example, if your host is in New York and the micro is in California, enter a -3 in this field. If the host is in Austin, Texas and the micro is in Boca Raton, Florida, enter a +1.

Facility Code

Type a facility number (1-to-5 digits long). If the 8RP board loses communication with the micro's CPU board, access can still be granted to all badges with a facility code that matches this field. If this field is left empty, the 8RP will grant access to all badges while in this degraded mode. This applies only for 8RP boards in a Micro/2 or Micro/4.

Shunt Code

Optional: Type a shunt code (1 to 10 digits long). With **Shunting Enabled** on the **Area** and **Reader** forms, this code entered on a keypad allows a badgeholder to prop a door open (for the time specified on the **Doors** form) without triggering a door-held-open alarm.

Alarm Response Code

Optional: Type an **Alarm Response Code** (1 to 10 digits long). With **Keypad Alarm Response Enabled** on the **Doors** form, this code entered on a keypad allows an authorized badgeholder to respond to and reset an active alarm. This **Alarm Response Code** must be different from the **Shunt Code** on the **Micros** form. See Chapter 23 - Keypad Alarm Response.

Badge History Threshold

Type the percentage at which the micro triggers the **Badge History Overflow** input group to notify the host that its **Badge Transaction** table has reached this percentage of capacity.

Alarm History Threshold

Type the percentage at which the micro triggers the **Alarm History Overflow** input group to notify the host that its **Alarm Transaction** table has reached this percentage of capacity.

Configure Online/Offline/Non-existent

Select whether the micro is being configured **Online**, **Offline** or **Non-existent**. If neither are selected, the micro is configured as non-existent, that is, not on the system.

Select **Online** to bring a micro online that was either configured offline or non-existent. The micro will be automatically reset when configured online.

Select **Offline** to allow this installed and connected micro to be configured before it goes online. This allows normal operations to continue without interruption by a flood of unexpected error messages related to this micro.

Select **Non-existent** to configure a micro that is not yet installed (physically connected). Once the micro is installed, bring up this form and select **Online** to put the micro online.

Type Normal/Elevator

Select whether this is a **Normal** micro, or an **Elevator** micro type. Only a Micro/5 can be used with **Elevator Control**. See Chapter 22 - Elevator Control for more details on this feature.

NOTE

An Elevator micro configured with multiple readers, uses Reader 1 to control the elevator.

Refer to Figure 10-9. “Micros Form (Bottom)” for the bottom portion of the **Micros** form.

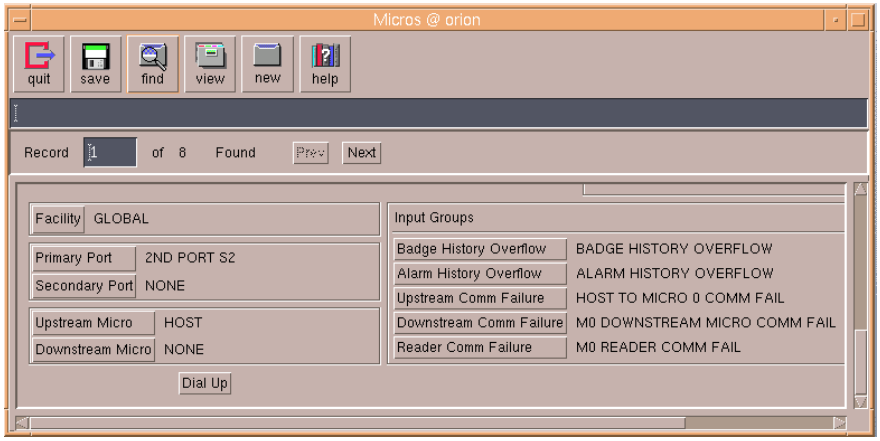


Figure 10-9. Micros Form (Bottom)

Facility

You must assign a facility to a micro. Other devices, such as readers and inputs, that are connected to the micro will default to this facilty, unless they are specifically assigned to another facility.

Primary Port

Displays the selected primary port for micro communications.

Click the **Primary Port** button to display the **Ports** picklist. Select the primary port to which this micro is wired, then click **Close**.

Uni-directional micros require a primary port assignment (and **None** specified for the secondary port). Bi-directional micros require both a primary and a secondary port assignment. Dial-up micros do not require a port assignment (assign **None** to both the primary and secondary port).

Secondary Port

Displays the selected secondary port for micro communications.

Click the **Secondary Port** button to display the **Ports** picklist. Select the secondary port that will be activated if communication is lost on the primary line, then click **Close**.

Upstream Micro

Displays the selected upstream micro.

Click the **Upstream Micro** button to display the **Micros** picklist. Select the micro or host that is upstream from this micro, then click **Close**.

Downstream Micro

Displays the selected downstream micro.

Click the **Downstream Micro** button to display the **Micros** picklist. Select the micro or host (or **None**) that is downstream from this micro, then click **Close**.

Dial Up

Click the **Dial Up** button to display the **Dial Up** pop-up window containing fields for dial-up communications (Figure 10-10).

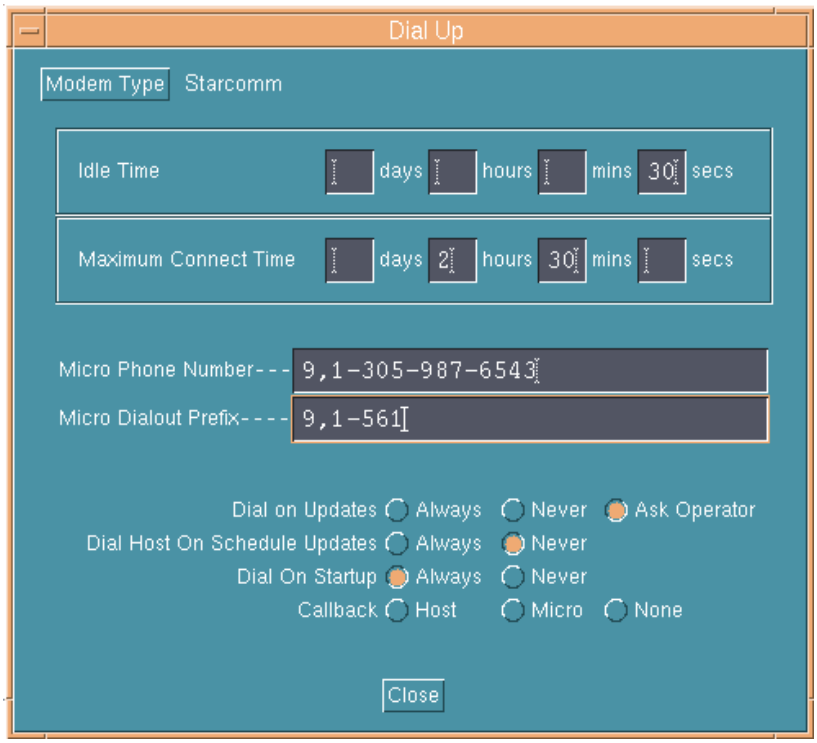


Figure 10-10. Dial-Up Window

Modem Type

Displays the selected modem type.

Click the **Modem Type** button to display the **Modems** picklist. Select the type of modem to connect to at the host, then click **Close**.

- For direct communication micros, select **None**.
- For network micros, without Dial-Up, select **None**.
- For network micros, with Dial-Up, select the host modem type.

The modem type selected for the micro must match the modem type (and baud rate) indicated by the micro's DIP switch settings on Switch Bank 2. See the appropriate Installation Guide for information on DIP switch settings. The modems in this list are created using the **Modems** form. See "Modems" on page 4.4 for information on setting up modems.

Idle Time

Enter the number of days, hours, minutes and / or seconds that the line must be idle before the line is dropped. This field must be greater than [(Host-micro retries) x (Host-micro retry interval)+1].

Maximum Connect Time

Enter the maximum number of days, hours, minutes and / or seconds (0 to 65536) that the micro and host may be connected.

After a reset to allow for badge download, the default maximum connect time is one hour.

Micro Phone Number

Enter the phone number of this dial-up micro, including area code. (This does not include PBX prefix or country code.)

Micro Dialout Prefix

Enter the PBX prefix, area code or country code (or other prefix) required with the Host phone number.

Dial on Updates

Specifies when the host should dial the micro with record changes:

Always
The host always dials the micro for any record changes that affect it.

Never
The host will not dial the micro for any record changes. Updates are made during the next communications session.

Ask Operator
The host will prompt the operator to see if it should dial the micro for each record change.

Dial Host On Schedule Update

Specify whether the micro should dial the host whenever changes occur due to a micro schedule.

Always
The micro always dials the host for any schedule updates that affect it.

Never
The micro will not dial the host for any schedule updates. Updates are made during the next communications session.

Dial On Startup

Specify whether the host should dial the micros whenever the system is started.

Always
The host always dials the micro whenever the system is started.

Never
The host will not dial the micro immediately whenever the system is started. Rather, it will wait a random amount of time, no greater than the polling period, before it dials the micro.

Callback

Specify whether a callback is required from the host, the micro, or neither. In a callback situation, the host or micro receiving the call flags the sender for a callback, then disconnects without a data transaction taking place. This strategy prevents a foreign system from communicating with the host or micro. This strategy may

also be cost effective if host-to-micro calls are less expensive than micro-to host calls, or vice versa.

Host
The host will call back the micro.

Micro
The micro will call back the host.

NOTE

A Micro/5 configured as **Micro Callback** cannot be flashed with upgraded application code. If you need to update the application code, set **Callback** to **None** prior to running the flash program. Upon completion, set it back to **Micro**.

None
No callbacks are required.

Input Groups

Select the appropriate input group for each error condition listed on the buttons: **Badge History Overflow**, **Alarm History Overflow**, **Upstream Comm Failure**, **Downstream Comm Failure**, and **Reader Comm Failure**.

Click each button to display a picklist of input groups. Select the desired input group for each, then click **Close**.

NOTE

Only **Trigger on Input** (Individual) input groups which are non-boolean are displayed in the picklist. See “Boolean Type” on page 9.5.

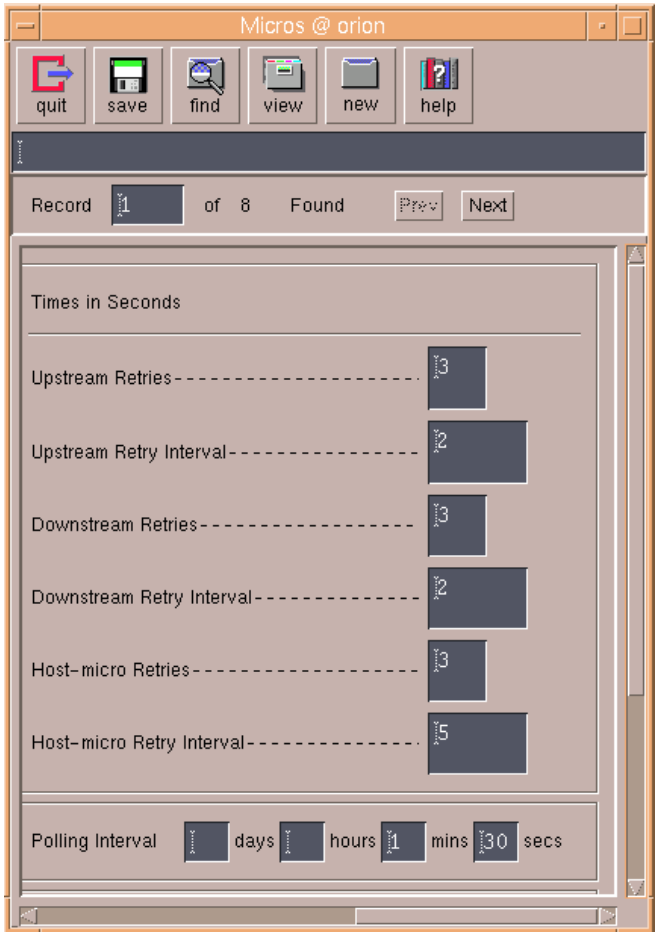


Figure 10-11. Micros Form (Right) Times in Seconds

Upstream Retries

Enter the number of times the micro will try to contact its upstream micro before triggering the **Upstream Communications Failure** input group (normally set to 3). See “Create Input Groups for Micro Error Conditions” on page 10.10.

Upstream Retry Interval

Enter the number of seconds between each upstream retry (normally set to 2 seconds).

Downstream Retries

Enter the number of times the micro will try to contact its downstream micro before triggering the **Downstream Communications Failure** input group (normally set to 3). See “Create Input Groups for Micro Error Conditions” on page 10.10.

Downstream Retry Interval

Enter the number of seconds between each downstream retry (normally set to 2).

Host-Micro Retries

Enter the number of times the host will try to contact this micro before triggering the **Upstream Communications Failure** input group (normally set to 3). See "Create Input Groups for Micro Error Conditions" on page 10.10.

Host-Micro Retry Interval

Enter the number of seconds between each host-to-micro retry (normally set to 2 seconds for direct connect micros and 8 seconds for dialup micros).

Polling Interval

Enter the number of days, hours, minutes and/or seconds that must elapse without communication to the host before the host polls this micro to verify that it is still capable of communicating (normally set to 60 seconds).

Dynamic Configuration

Micros (firmware 2.0 or later required) can be configured dynamically, meaning the Picture Perfect system does not have to be restarted for the changes to take effect. However, there are some rules that must be met. If these rules are not met, an error message will display and none of the changes will be made until that rule is satisfied.

NOTE All of the fields on the **Micros** form support dynamic configuration, except for the Micro ID. Once a micro's ID is set, it cannot be changed.

Rule 1: Every micro must have a head (or upstream) micro.

Rule 2: Every micro must have a tail (or downstream) micro.

Rule 3: A micro can be upstream from at most one micro.

Rule 4: A micro can be downstream from at most one micro.

Rule 5: The primary port must be the same for a micro and its downstream micro.

Rule 6: The secondary port must be the same for a micro and its downstream micro.

Rule 7: An upstream micro must have a matching downstream micro.

Rule 8: A downstream micro must have a matching upstream micro.

Rule 9: The last micro in a bi-directional line must have a Host downstream.

Rule 10: Two head micros cannot have the same primary port.

Rule 11: Two tail micros cannot have the same secondary port.

Rule 12: A network dial-up micro must have a matching downstream micro.

Rule 13: A network micro must have a matching downstream micro.

Data Encryption

In order to secure transmission between the host and the network micro, the data is encrypted using DES (Data Encryption Standard). This is accomplished by means of a key to create the encryption pattern for transmission.

Setup

➤ **To manage the DES keys used:**

1. From the **Main Menu**, select **Control**, then **Keys**.

2. Select **Find** (shows all configured micros). The user can enter the micro ID and then select **Find** to edit the record.

NOTE

You cannot enter and save data from a blank screen. You must edit existing records by performing a search and editing the record as necessary.

3. Due to the sensitive information presented on the screen, you will be prompted for root's password if you attempt to perform any operations with the keys.

The Keys Form

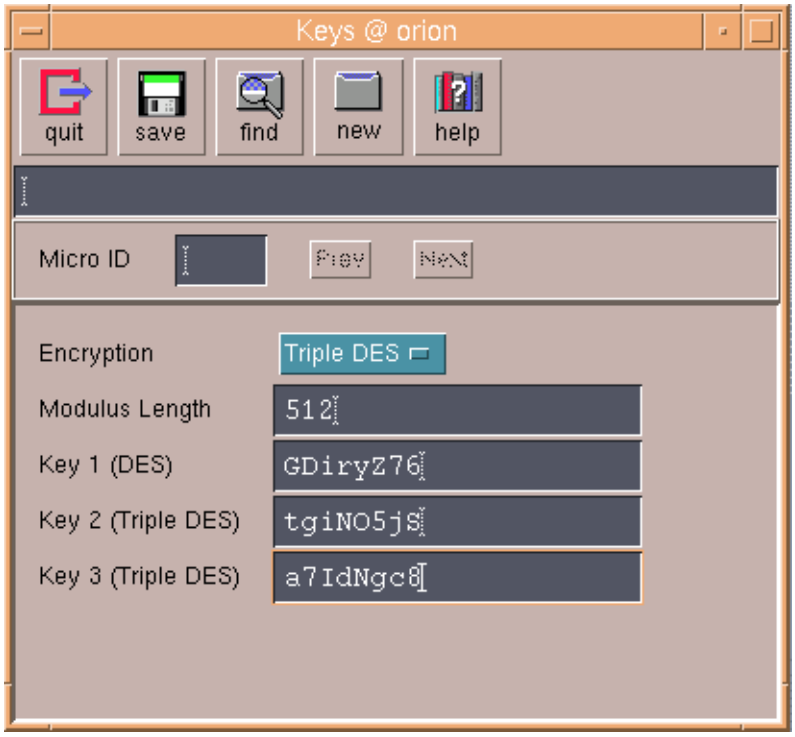


Figure 10-12. The Keys Form

The following required fields are user definable according to the parameters described.

Encryption

This is a required field which defines the type of encryption to be used. It can be set to one of three values:

- None - No encryption is used; the original or plain text is transmitted.

NOTE

None is the default. In order to activate this feature, one of the following must be selected.

- DES - Both sender and receiver use a single key (Key 1) to encrypt and decrypt data.
- Triple DES - Both sender and receiver use three keys (Key 1, Key 2, and Key 3) to encrypt and decrypt data.

Key 1

The length of this field must be eight alphanumeric characters. This key is used for a single DES algorithm as well as the first key used in the Triple DES algorithm.

Key 2

The length of this field must be eight alphanumeric characters. This is the second key used in the Triple DES algorithm.

Key 3

The length of this field must be alphanumeric characters. This is the third key used in the Triple DES algorithm.

NOTES

Flashing Micros

Chapter 11

Overview

When the micro is powered up, you may need to flash download the Picture Perfect application code into the micro (Micro/5 and Micro/PX-2000 series only). You can use the Micro Flash Utility, the Micro Installation (MICTOOL) Utility, or if you are running Picture Perfect 2.0 or later, eFlash.

In the **/cas/flash** directory, there is a separate directory for each type of micro's firmware (hex file). For example, the directory **m5p200o** contains the hex file for the direct-connect Micro/5-PX.

The following is a list of all Picture Perfect 2.0 firmware file directories and what type of hex file each contains.

```
total 336
drwxr-xr-x  8  root  sys   512    Mar 31  16:34  ./
drwxr-xr-x  16 root  sys   512    Mar 27  09:14  ../
-rw-r--r--  1  root  sys   133276 Mar 31  16:33  flash.dat
drwxr-xr-x  2  root  sys   512    Mar 13  16:43  m5o200s/  Micro/5-PXN operatng system code
drwxr-xr-x  2  root  sys   512    Mar 14  11:02  m5p200o/  Micro/5-PX Direct
drwxr-xr-x  2  root  sys   512    Mar 14  18:32  m5p200p/  Micro/5-PX Dial Up
drwxr-xr-x  2  root  sys   512    Mar 19  15:44  m5p200s/  Micro/5-PXN application code
-rw-r--r--  1  root  sys   556    Mar 28  17:33  tty7.log
-rw-r--r--  1  root  sys   312087 Mar 28  17:33    eflash/m5pe200.efl  Micro/5-PX Direct eFlash code
-rw-r--r--  1  root  sys   140881 Mar 28  17:33  eflash/m5npe200.efl  Micro/5-PXN eFlash code
```

Prerequisites

- If the micro is configured for **Micro Callback**, the **Callback** feature must be disabled (the **Callback** field on the Micro form must be set to **None**) in order to perform a flash download. Upon completion of the download, the feature can be enabled (the **Callback** field can be set back to **Micro**).
- If this is a dial-up micro, it must be disconnected from the host before attempting to flash.
- A micro must already be flashed with firmware 1.70 or later to make use of the eFlash feature.

What You Will Be Doing

This chapter includes instructions for flashing your micros using three methods:

Refer to the section, “Flash Download Utility” on page 11.2, if you are running a version of Picture Perfect earlier than Picture Perfect 2.0.

Refer to the section , “MicTool” on page 11.6, if you are using MicTool to flash your micros.

Refer to the section “eFlash” on page 11.8, if you are running Picture Perfect 2.0 or later.

Flash Download Utility

This download procedure can be used with Picture Perfect version 1.3 host systems or later. The flash download program to upgrade the EPROMs of a Micro/5, a Micro/PX-2000 or Micro/PXN-2000 is accessed through the **`flash`** utility of Picture Perfect using the command line.

Features

- Flashes Micro/5-PXN, Micro/5-PX, MicroProx, and Micro/5-P micros
- Flashes downstream micros

Limitations

- Cannot edit micro parameter settings such as phone numbers or a micro IP address
- Does not provide online help
- Micro must be in maintenance mode during the flash download

Operation

➤ **To flash a micro using the Picture Perfect Flash Download Utility:**

1. Log in as **`root`** at the console.

2. To access the **Micro Flash EPROM Upgrade** menu, at the command line prompt, type: **`flash`** Enter

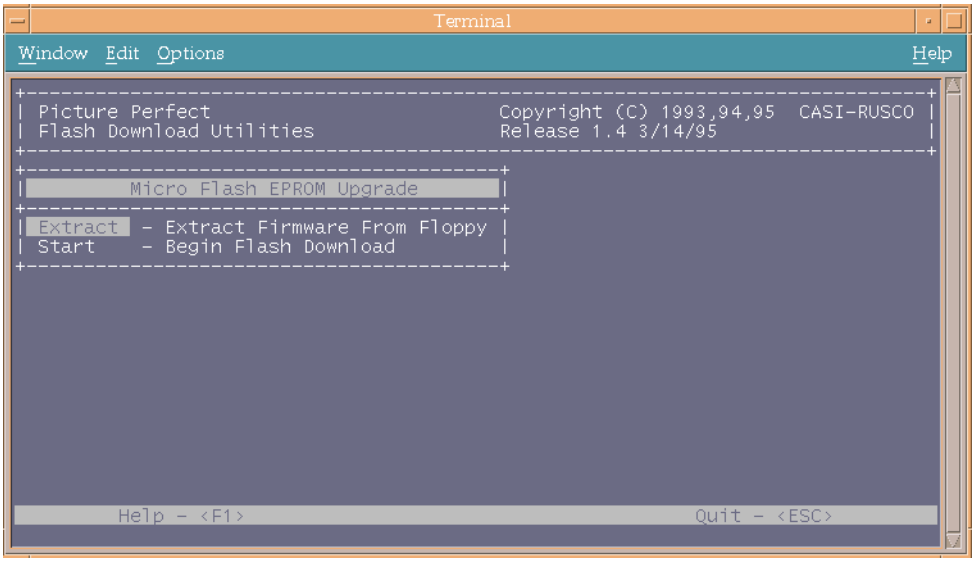


Figure 11-1. Micro Flash EPROM Upgrade Menu

3. Insert a diskette containing the firmware hex files into the disk drive.

4. From the **Micro Flash EPROM Upgrade** menu, select **Extract** to transfer new EPROM data from the diskette to the hard drive.

   Result: The floppy-drive device path will be displayed.

5. Press Enter to start the extract. The new EPROM information will be transferred to the hard drive.

   Result: When the extract is complete, a summary of the information appears, similar to the following:

```
Floppy drive

Directory............./cas/flash/m5p140
Version Info.........M/5P Ver 1.40 Direct
Optimized............454784 bytes
Non-Optimized........620099 bytes
```

6. Press any key to return to the **Micro Flash EPROM Upgrade** menu.

7. Once the new EPROM information is transferred to the hard drive, select **Start** from the **Micro Flash EPROM Upgrade** menu. The **Start** option allows the new EPROM files to be flash-downloaded to any or all of the Micro / 5s, Micro / PX-2000s, or Micro / PXN-2000s on the system, regardless of whether the micros are dial-up, direct, or network.

   Result: The **Begin Flash Download** form appears. All system micros (Micro / 4 , Micro / 5, and Micro / PX-2000 series) are displayed under the **Micro Map** column and all micro types can be selected, however, the flash download will only execute on Micro / 5s, Micro / PX-2000s, or Micro / PXN-2000s. Selecting Micro / 4s will not affect the downloading process to the selected Micro / 5s, Micro / PX-2000s, or Micro / PXN-2000s.

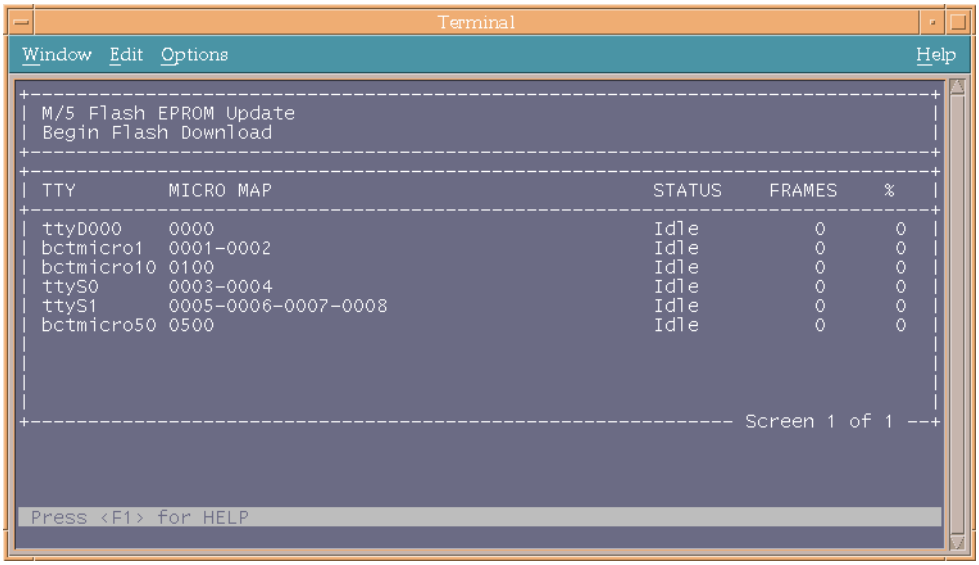

Terminal
Window Edit Options Help
M/5 Flash EPROM Update
Begin Flash Download
TTY MICRO MAP STATUS FRAMES %
ttyD000 0000 Idle 0 0
bctmicro1 0001-0002 Idle 0 0
bctmicro10 0100 Idle 0 0
ttyS0 0003-0004 Idle 0 0
ttyS1 0005-0006-0007-0008 Idle 0 0
bctmicro50 0500 Idle 0 0
Screen 1 of 1
Press <F1> for HELP

Figure 11-2. Begin Flash Download

8. Use the arrow keys to move to the desired micros for flash download.

9. Press F2 or T to select or deselect a micro. All micros in a micro line must be selected individually (use the left and right arrows to reach them).

   Result: When a micro is selected, it appears in boldface. The system determines whether the micro is direct, dial-up or network, so no communication specification needs to be made.

10. When all desired micros have been selected, press Esc to display a listing of hex files available for download.

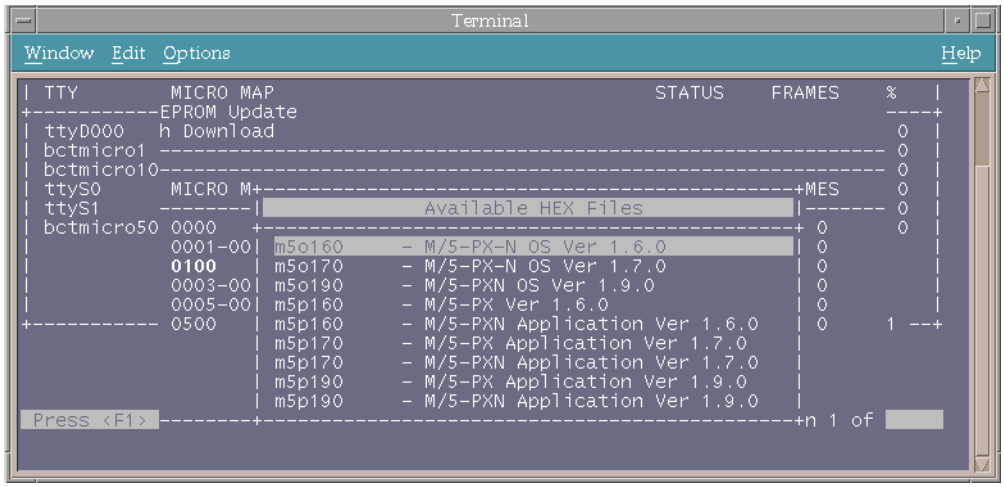


Figure 11-3. Available Hex Files

11. Cursor to the desired hex file, then press Enter to select it and start the download. If you need to manually enter the hex file and path name, do not select a file from the list. Instead, press Esc again, type the path name, then press Enter to start the download.

    Result: The download will begin and progress will be displayed.

- The **Status** column indicates the action taking place on the highlighted micro of each micro line selected. The status messages include **`maint`**, **`polling`**, **`erase`**, **`sending`**, **`connecting`**, **`connect`**, **`restore`**, and **`ignoring`**. An asterisk (**`*`**) beside the sending status message indicates that the file being downloaded is the optimized version of the hex file (determined by the micro's boot prom), and will complete its download more quickly (in approximately 10 minutes).
- The **Frames** column indicates the number of data blocks downloaded to the highlighted micro.
- The **%** column indicates the percentage of the download completed to the highlighted micro.

When the download for a micro is complete, that micro will no longer appear in boldface. If the download for a micro is unsuccessful, that micro will remain in boldface. At this point, it takes about 60 seconds for the flash program to terminate. If the micros were defined as online in the database, the micros will reset and receive their database and come online.

MicTool

Although Micro Installation Tool - FlashTool will work with old and new micros (all new micros contain SmartBoot), some functions are available only if the micro has SmartBoot installed. SmartBoot is distributed with the tool for the Micro/5-PX and the Micro/5-PXN. SmartBoot allows the tool to do the following:

- Extract and show the firmware revision (such as Picture Perfect 1.6).
- Alert the user if the firmware in the micro is not the latest released code.
- Alert the user if the network micro has an OS (operating system) application mismatch.

Features

- Automatically recognizes any CASI micro (M5/PX, M5/PXN, MicroProx, Micro/PX-2000, Micro/PXN-2000, M5/E, or M5/P).
- Error checking of the parameter block entries, such as the network IP addresses and phone number.
- Option of acquiring new firmware through the Internet or diskette with the firmware automatically installed in the correct directory.
- Online Help

Limitations

- Micro must be in maintenance mode during the flash download

Operation

➤ **To flash a micro using MicTool:**

1. Launch the Micro Installation Tool - FlashTool by choosing one of the following:

   a. Running or setting up a shortcut to **`flash.exe`** in your FlashTool directory.

   b. Clicking the flash icon while running MICTOOL Test.

   Result: The MicTool, FlashTool main screen will display.

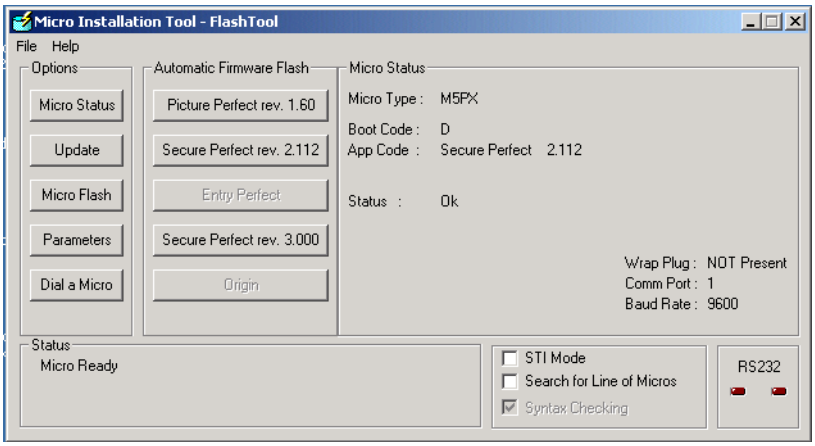


Figure 11-4. MicTool - FlashTool Main Screen

2. The automatic flash buttons allow you to flash a micro with the latest release of firmware that is present on your PC.
   To flash an older version of firmware or to flash boot code, you will need to click Micro Flash to access a picklist.

3. For detailed information on how to use FlashTool, click **Help** to access the online help table of contents, or press F1 to display context-sensitive help.

eFlash

This download procedure can be used with Picture Perfect version 2.0 host systems or later. The eFlash download program is installed as part of the base Picture Perfect 2.0 product and can be run on stand-alone systems, network subhosts, and on the primary host of a redundant system.

On a networked system, eFlash should not be installed on the network host, since it can not be run there. It can run on all subhosts simultaneously and is capable of flashing the micros connected to each subhost.

Features

- eFlash is a new flash method which does not require the micro to be in maintenance mode while the flash code is being downloaded.
- Flashes Micro/5-PX, Micro/5-PXN, M/PX-2000, and M/PXN-2000 micros.
- All communication is handled by the host.

Limitations

- Micros must already have been flashed with Picture Perfect micro firmware version 2.0 or later.

Operation

eFlash can be run either from a Graphical User Interface (the default) or from the unix command line.

Operating eFlash in a Graphical Mode

➤ **To flash a micro using the eFlash GUI:**

1. Log in as **`root`** and open a terminal window.
2. At the command prompt, launch eFlash by typing **`eflash`** (Enter).

   Result: The eFlash main screen will display.

NOTE

Only one instance of eFlash can be run on a system. When eFlash begins, it creates a lock file: /tmp/.eflash.lock

If the lock file exists, indicating that the program is running, when you attempt to launch eFlash, an error message will display and the program will exit.

NOTE

The eFlash graphical user interface will terminate and generate an error message if both an Alarm Graphics form and a Badges form, displaying an image, are open.

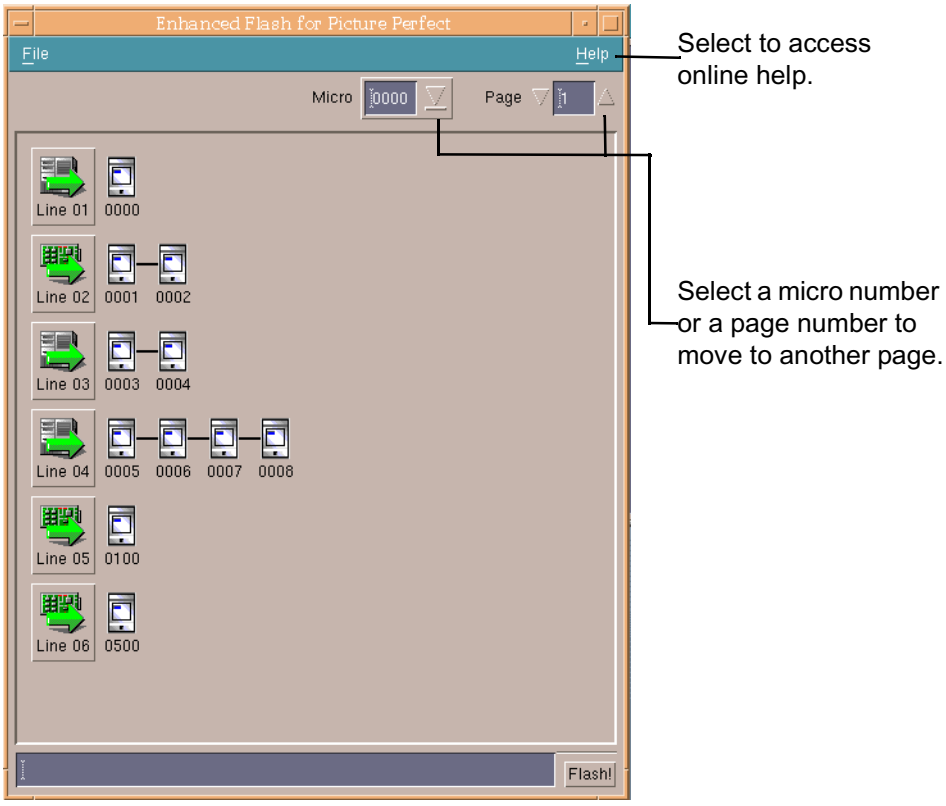
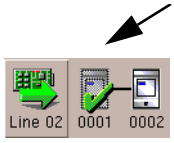


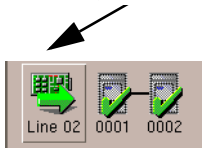
Figure 11-5. eFlash

3. Select the micro you want to update.
   To select a single micro, click on the micro:



Result: A green check mark will appear over the micro you selected.

To select a line of micros, click on the line icon to the left of the micros..



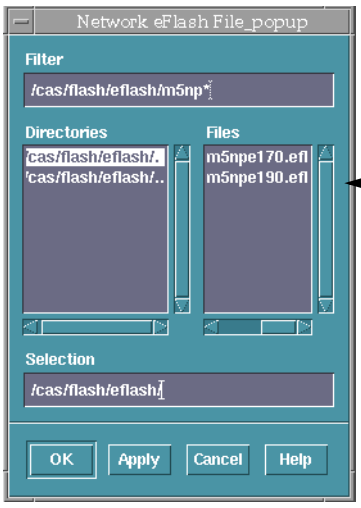
Result: Green check marks will appear on all the micros in the selected line.

4. To select the firmware hex files to use to update the micro, click on the **File** menu.

5. Select either **Direct Micro File** or **Network Micro File** according to the type of micro you will be flashing.

NOTE Any micro that is downline from a Network micro, is considered a Direct micro.

Result: A window similar to the following will display.



eFlash file names reflect the micro type and firmware version number and have a file extention of .efl for example:
`m5npe` indicates a network Micro/5
`190` indicates the firmware version
`.efl` indicates an eFlash file

Figure 11-6. Network eFlash File Popup

6. Under **Files**, select the firmware hex file to be used for flashing.

Result: The path and filename will display in the **Selection** window.

7. Click **OK** to return to the main eFlash window.

8. Click the **Flash** button at the bottom of the window, to begin the flash procedure.

   Result: A dialog similar to the following will display the default files that will be used for **Direct** or **Network**. If you specified a different file, it will be displayed.

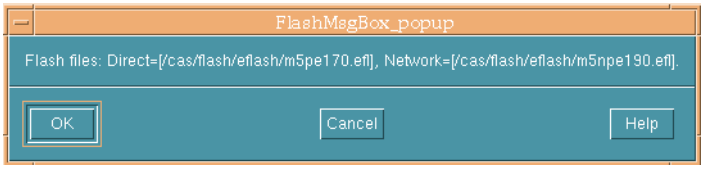


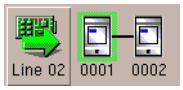
Figure 11-7. Default eFlash File Popup

9. Click **OK**.

   Result: The flash procedure will begin and the micros being flashed will be highlighted in yellow.

10. Wait until the flash is complete. You will not be able to flash another micro until the current selections are complete.

    Result: When the flash procedure is complete, the highlight around the micros being flashed, will change to green.



    If the flash process failed or if communication with the micro cannot be re-established, the highlight will be red.

Operating eFlash from the Command Line

The following command line arguments are available:

-c
Command line selection option

-p<directory>
Specifies the source directory to search for flash files. This replaces the default directory of **`/cas/flash/eflash`**.

-f<filename>
Specifies a flash file to use for the 5PX micro, instead of the default flash.

-n<filename>
Specifies a flash file to use for the 5PXN micro, instead of the default flash.

-x<number>
Specifies the maximum number of micros that can be flashed at one time.

-h
Starts the HTML based online help.

-u or **-?**
Prints out the usage message.

-m<micro selection>
Specifies the micro to be flashed. This option can be repeated multiple times.

- To flash all active micros in the Picture Perfect database, use:
  `eflash -m a` Enter
- To flash a specific micro, use:
  `eflash -m <microid>` Enter

  where **`<microid>`** is the ID of any micro on the line. eFlash adds all other micros on the line to the flash list in the correct order.
- To flash a line of micros, use:
  `eflash -l <microid>` Enter

  where **`<microid>`** is the ID of a micro, such as **`0001`** that is on the line you wish to flash.

➤ **To flash a micro using eFlash from the command line:**

1. Log in as **root** and open a terminal window.

2. At the command prompt, enter a command using the following parameters:

   eflash -c -m01 -p /cas/flash/eflash -f mspe170.dfl Enter

   where **mspe170.dfl** is the micro id.

   Result: After the flashing has completed, one of the following messages will be displayed:

   Flashing is successful

   or

   Flashing is unsuccessful. See the log file<filename> for details.

The eFlash Configuration File

This is an optional file, **.eflashrc**, that resides on the host in the root user's home directory. The purpose of the file is to allow a Picture Perfect operator to define flashing requirements for the entire system once, and then use part or all of the definition to flash or reflash micros as needed. This file can be used for scheduling unattended flashing.

This file can contain a combination of comand line arguments, processing rules, and comments.

Command Line Arguments

All of the following command line options can be included, either one per line or you may concatenate many options per line.

-p<directory>
Specifies the source directory to search for flash files. This replaces the default directory of **/cas/flash/eflash**.

-f<filename>
Specifies a flash file to use instead of the default flash used for direct connect type micros (PX).

-n<filename>
Specifies a flash file to use instead of the default flash used for network type micros (PXN).

-m<micro id>
Specifies the micro or micros to be flashed.

-m a

Specifies that all active micros in the Picture Perfect database be flashed.

-l<micro id>

Specifies a micro in a line of micros, where the entire line is to be flashed.

If options are repeated, only the last value read from the file is used. The exceptions are the **-m** and **-l** options, which use all specified micros.

Processing Rules

Parameters that control the flashing of the micros during the current execution of eFlash may be included. The following two parameters may be included:

flashwait=value(in seconds)

Sets the time that eFlash waits for the micro to actually flash the EPROM. The flash of a micro is considered a failure if the flash times out. The default is 90 seconds.

maxflash=value(in seconds)

Sets the maximum number of micros that can be flashed simultaneously. The actual number of micros that is being currently flashed will always be less than or equal to this value and may be considerably less than this value due to restrictions on flashing multiple micros in the same line. The default is 5.

Comments

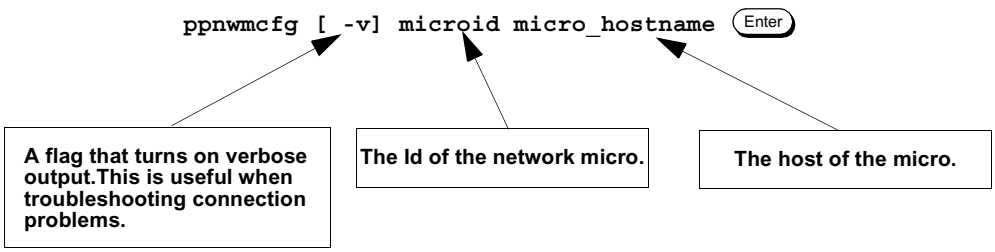
The eFlash configuration file may contain comments. A comment is a line that begins with the pound sign (**#**). The pound sign and all characters up through the next carriage return are ignored.

Network Micro Parameter Block Configuration

The **ppnwmcfg** command allows the root user to configure a network micro's parameter block from the host by connecting to the network micro. Once connected, the **ppnwmcfg** utility will put the network micro in maintenance mode and display the current settings.

➤ **To display the ppnwmcfg utility:**

1. Log in to Picture Perfect as **root** and type:


ppnwmcfg [-v] microid micro_hostname
Enter
A flag that turns on verbose output.This is useful when troubleshooting connection problems.
The Id of the network micro.
The host of the micro.

Result: The **ppnwncfg** utility will display.

Menu Options

The **ppnwmcfg** utility displays the following menu options:

S - - - - Show parameter block

Displays the contents of the network micro's parameter block

C - - - - Clear parameter

Clears a specific value

U - - - - Update parameter block

Writes the current values to the parameter block

1 - n - - Modify parameter

Selecting a number will prompt you for a new value

E - - - - Edit all

Prompts you for each parameter block value

Q - - - - Quit

Exits out of **ppnwmcfg**. Once you have quit the **ppnwmcfg** utility, the network micro will require about 30 seconds of idle communication before it resets.

Parameters

The fields shown below may vary depending on your firmware version.

address

The micro ID which is not necessary unless you are configuring a network dialup micro

phone1

Primary host number for a network dial-up micro to call

phone2

Secondary host number for a network dial-up micro to call

mmdmm_init

Modem initialization string

mdmm_dinit

Modem de-initialization string

rx_idle_time

The minimum number of characters (20 - 254) to process a buffer

hop_count

The number of hops (network boards that must be crossed) between the network micro and host

ring_speed

Specifies ring speed for token ring networks only

source_ip

The network micro's IP address.

destination_ip

The Picture Perfect host's IP address

NOTE

The network micro will accept connections only from the host defined in this field. If this field is updated incorrectly, the network micro can only be configured from a laptop computer.

alternate_ip

The backup machine's IP address in a Picture Perfect redundant system

gateway_ip

The network micro's gateway IP address to reach the destination_ip

subnet_ip_mask

The network micro's subnet mask

alt_gateway_ip

The network micro's gateway IP address to reach the alternate_ip.

NOTES

Inputs and Outputs

Chapter 12

Overview

The Picture Perfect system monitors digital inputs (DIs) for contacts and digital outputs (DOs) for controlling output devices.

Outputs are triggered when associated inputs activate. Outputs can operate devices such as door strikes, bells, and lights. Inputs may be physical connections to a microcontroller or logical events such as a transaction buffer overflow or an invalid access attempt.

Prerequisites

The following Picture Perfect forms are prerequisites:

Forms	Purpose
PRINTER ROUTINGS	To direct messages generated by input and output activity to the printer in addition to history and monitor displays.
INPUT GROUPS OUTPUT GROUPS	To allow door inputs and door outputs to activate.
MICROS	To assign inputs or outputs to specific micros.
ROUTE DEFINITIONS ROUTE POINTS	To allow area activity monitor routing for DIs.

What You Will Be Doing

This chapter shows you how to add (or change) individual outputs and individual inputs.

Outputs and inputs include description fields that describe the function or effect of the record. The description becomes part of the transaction message, telling the monitoring operator what happened and where. One part of this description may include non-technical language for operator information, and the other part may include a wiring location.

For example, you may write the following description for an output that controls a light indicating the back door is open:

```
BACK DOOR OPEN 002-00-07
```

In this example, the first part of the description indicates the purpose of the output; the second part indicates that the output is connected to DO point 07 on CPU board 00 of Micro ID 002. How you write output descriptions is entirely an administrative decision, but this way of writing descriptions makes the system messages easier to use. To make reports easier to read, you may want to write the number description first so that the language description lines up with other records:

```
002-00-07 BACK DOOR OPEN
002-00-08 SHIPPING DOOR OPEN
```

Outputs

Outputs that operate devices such as door strikes, lights, or sirens must be described to the system. Use the **Outputs** form to define where this output point is connected, how it is wired to activate, how long it remains on when activated, how it resets, and what output group is associated with it.

Use the **Outputs** form (Figure 12-1) to define the characteristics of each output point.

Setup

➤ **To add an output record:**

1. Select **Devices**, then **Outputs**.
2. Click **New**.
3. Complete the **Outputs** form. For a description of each field, see “The Outputs Form” on page 12.3.
4. Click **Save**.

The Outputs Form

The following is a list of fields that may require additional information for you to complete. The list is in the order that the fields appear on the form. There is no required sequence to follow.

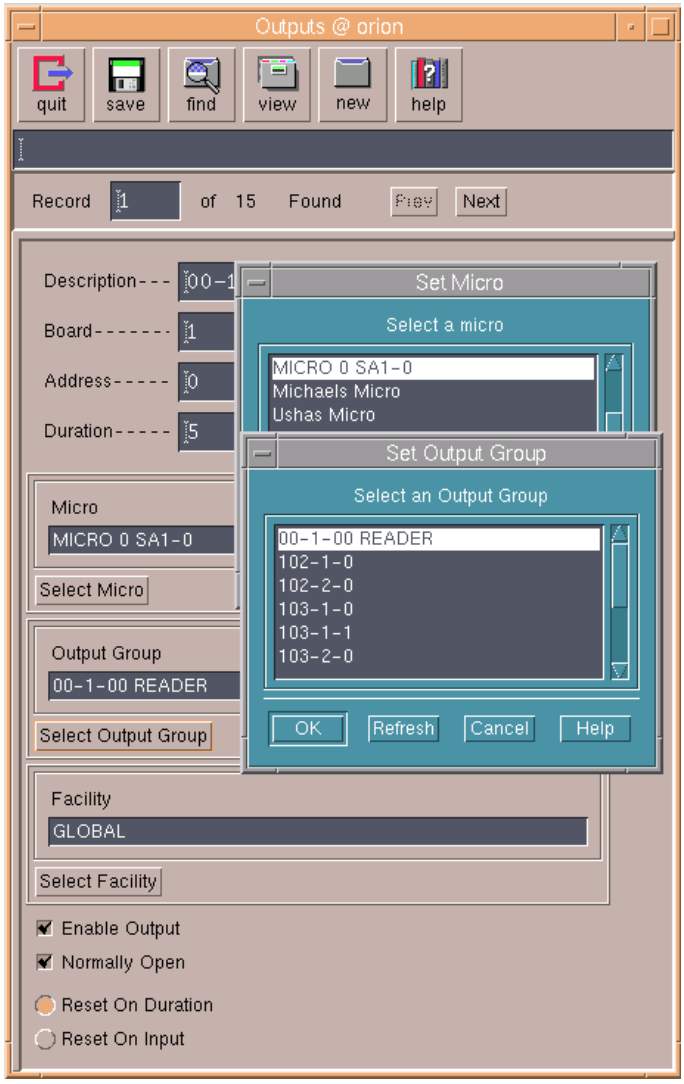


Figure 12-1. Outputs Form

Description

Type a description of the output, usually including a micro board address and a text description.

Board

Type a board number from 0 to 8. The microcontroller's power / comm board is always board 0.

NOTE

Use the Micro Wiring Charts for the Micro/4 and Micro/5 to find the board number and address where an output point is located. Refer to Table 12-1 and Table 12-2. Verify the board number with your installer.

Address

Type a number from 0 to 47 (for the Micro / 4) or 0, 1, 8, 9, 16 to 31 (for the Micro / 5) for the digital output address where the output is wired to the connector on the board.

Duration

Type the number of seconds this output remains on when activated, if this output is allowed to reset when the duration time expires. The maximum value is 32,767. If 0 is selected, the output will not reset but will remain activated continuously. See "Outputs Form with Micro and Output Group Picklists" on page 12.8 and "Reset on Input" on page 12.8.

Micro

Displays a description of the selected micro where this output is connected.

Click the **Select Micro** button (Figure 12-3) to display the **Micros** picklist. Select the desired micro, then click **Ok**.

Output Group

Displays a description of the selected output group to link this output point with a group of outputs.

Click the **Select Output Group** button (Figure 12-3) to display the **Output Groups** picklist. Select the desired output group, then click **Ok**.

Table 12-1: Micro/4 Wiring Chart - Outputs

Element	Board Number	DO Address	Reader Address
CPU	0	0 - 15	--
8RP Board Micro/2	(DIP Switch Address) +1	0 - 15	0 - 7
1st 32DO Board	Same as 8RP or Micro/2	16 - 47	--
2nd 32DO Board	(1st DO Board) +1	16 - 47	--
3rd 32DO Board	(1st DO Board) +2	16 - 47	--
4th 32DO Board	(1st DO Board) +3	16 - 47	--

NOTE

1: 8RP and Micro/2 board numbers are 1 to 8. To calculate the board number, add 1 to the DIP switch address, which is a number from 0 to 7.

2: Up to four 32DO boards can be connected to a Micro/2 or 8RP. Each output on the first 32DO board has the same board number as the Micro/2 or 8RP where it is connected. Each subsequent 32DO board uses the next sequential board number.

3: Every 32DO board after the first one takes an available 8RP or Micro/2 slot.

4: Strike DOs are 0 to 7; Aux DOs are 8 to 15; Normal DOs are 16 to 47.

5: Refer to Figure 12-2 on page 12.6 for the 32DI/DO board addressing scheme

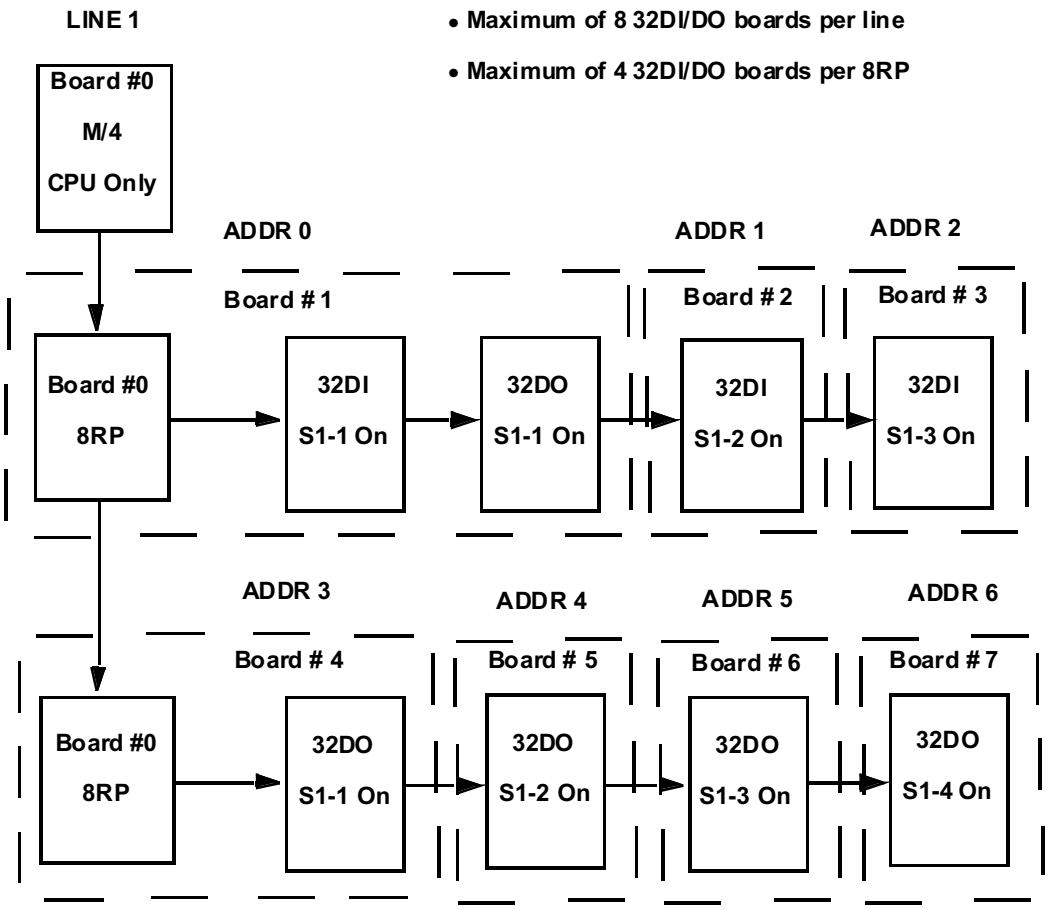


Figure 12-2. 32DI/DO Board Addressing Scheme

Table 12-2: Micro/5 Wiring Chart - Outputs

Element	Board Number	Door DO Address	Reader Address	Aux. DO Address
CPU	--	--	--	--
2RP Board	1 - 4	0 - 1	0 - 1	8 - 9
16DO/DOR Board	1 - 4	--	--	16 - 31

NOTE

Optional boards include four 20DI boards (20 supervised input points), four 16DO boards (16 output points), and two 2RP boards (2-reader board).

The Micro/5 cabinet has a seven-slot capacity. Two slots are used by the mandatory Power/Communications and CPU boards. The remaining five slots may be configured to meet your site requirements with any combination of boards, within the limits listed above.

Strike DOs are 0 to 1; Aux DOs are 8 to 9; Digital Output Board DOs are 16 to 31.

Facility

Click the **Facility** button to display the facilities picklist. By default, the output record will be assigned the same facility as the micro to which the output is assigned however, you do have the ability to manually re-assign an output's facility. This might be desirable in a case where one micro controls more than one facility, for instance two companies occupying the same building that use separate doors for entry / exit. For more information, see Chapter 5 - Facilities and Facility Profiles.

Enable Output

Toggle the button **On** if this output is to be activated when its output group triggers.

Normally Open

The inactive state of an output is either normally open or normally closed. Toggle this button **On** if it is normally open.

NOTE

Ask your installer how the output point is wired. Door DOs are usually wired "normally open."

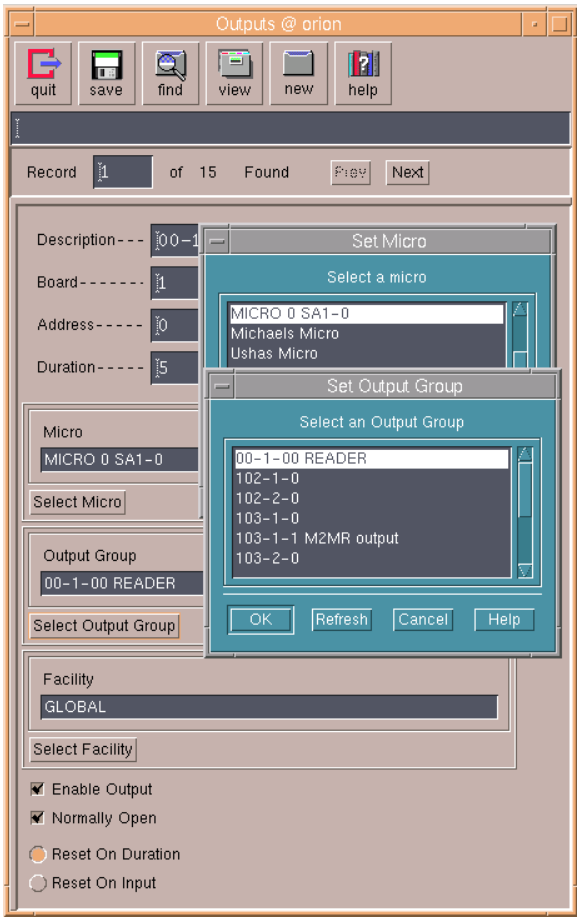


Figure 12-3. Outputs Form with Micro and Output Group Picklists

Reset on Duration

Select this button if the output should reset after the number of seconds specified in the **Duration** field. (There is a possible alarm override for a duration reset. See Chapter 8 - Alarm Activity Messages and Alarms.) For example, you may want an output to reset on duration if the output device is a door strike and you want it to stay on for a limited duration of time.

Reset on Input

Select this button if the output should reset as soon as the input resets.

NOTE

If neither **Reset On Duration** nor **Reset On Input** is selected, the output stays on. If **Reset On Input** is selected, the door does not unlock with a valid badge read.

Inputs

Physical inputs such as sensors or detectors must be described to the system. Use the **Inputs** form to define where each input point is connected, how it is wired to activate, what kind of state changes activate it, how long it remains detected before it activates, which input group is associated with it, and where messages about this input are routed.

Use the **Inputs** form (Figure 12-4) to define the characteristics of each physical input point.

Setup

➤ **To add an input:**

1. Select **Devices**, then **Inputs**.
2. Click **New**.
3. Complete the **Inputs** form. For a description of each field, see "The Inputs Form" on page 12.9.
4. Click **Save**.

The Inputs Form

The following is a list of fields that may require additional information for you to complete. The list is in the order that the fields appear on the form. There is no required sequence to follow.

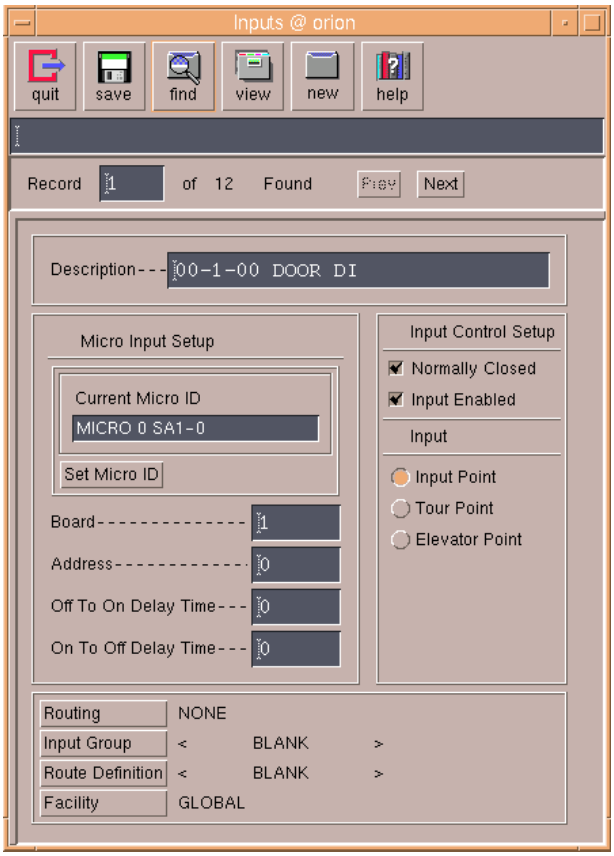


Figure 12-4. Inputs Form

Description

Type a description of the input, usually including a wiring address and a written description.

Micro Input Setup

Current Micro ID

Displays the selected micro where this input point is located.

Click the **Set Micro Id** button to display the **Micros** picklist (Figure 12-5). Select the desired micro, then click **Ok**.

Board

Type a board number from 0 to 8. The microcontroller's power/comm board is always board 0.

NOTE

Use the Micro Wiring Charts for the Micro/4 and Micro/5 to find the board number and address where this input point is located. Refer to Table 12-3 and Table 12-4. Verify the board number with your installer.

Address

The **Address** field indicates what digital input point on the board this input is using. Type a number from 0 to 47 (for the Micro/4) or 0, 1, 8 to 9, or 16 to 35 (for the Micro/5). The address depends on how the input is wired to the connector on the board. Ask your installer.

Table 12-3: Micro/4 Wiring Chart - Inputs

Element	Board Number	DI Address	Reader Address	Exit DI
CPU	0	0 - 31	--	--
8RP Board Micro/2	(DIP Switch Address) +1	0 - 7	0 - 7	8 - 15
1st 32DI Board	Same as 8RP or Micro/2	16 - 47	--	--
2nd 32DI Board	(1st DI Board) +1	16 - 47	--	--
3rd 32DI Board	(1st DI Board) +2	16 - 47	--	--
4th 32DI Board	(1st DI Board) +3	16 - 47	--	--

NOTE

1: 8RP and Micro/2 board numbers are 1 to 8. To calculate the board number, add 1 to the DIP switch address, which is a number from 0 to 7.

2: Up to four 32DI boards can be connected to a Micro/2 or 8RP. Each input on the first 32DI board has the same board number as the Micro/2 or 8RP where it is connected. Each subsequent 32DI board uses the next sequential board number.

3: Every 32DI board after the first one takes an available 8RP or Micro/2 slot.

4: On a Micro/4, the Tamper and AC Power Fail inputs may be wired to any available DI points.

Table 12-4: Micro/5 Wiring Chart - Inputs

Element	Board Number	DI Address	Reader Address	Exit DI
CPU	--	--	--	--
2RP Board	1 - 4	0 - 1	0 - 1	8 - 9
20DI Board	1 - 4	16 - 35	--	--

NOTE

1: Optional boards include four 20DI boards (20 supervised input points), four 16DO boards (16 output points), four 2RP boards (2-reader board), and one 8RP board (8-reader board).

2: The Micro/5 cabinet has a seven-slot capacity. Two slots are used by the mandatory Power/Communications and CPU boards. The remaining five slots may be configured to meet your site requirements with any combination of boards, within the limitations listed above.

3: On a Micro/5, the Tamper and AC Power Fail inputs must be wired to connector 6 on the Power/Communications board. The AC Power Fail input will always be defined as Board 0, Address 0; the Tamper input will always be defined as Board 0, Address 1.

Off To On Delay Time

The **Off To On Delay Time** delays the effect of the input described on this form when it changes state from **Off** to **On**. This delay helps avoid false input detections. Type the number of seconds (0 to 65535) required for the delay. Leaving this field blank or typing a 0 (zero) causes no delay. Set this delay to 0 for an Exit DI.

This field overrides the **Delay Time** set on the **Input Groups** form. See “Delay Time” on page 9.5.

On To Off Delay Time

The **On To Off Delay Time** delays the effect of the input described on this form when it changes state from **On** to **Off**. This delay helps avoid false input detections. Type the number of seconds (0 to 65535) required for the delay. Leaving this field blank or typing a 0 (zero) causes no delay. Set this delay to 0 for an Exit DI.

This field overrides the **Delay Time** set on the **Input Groups** form.

Input Control Setup

Select one or both of the following toggle buttons:

Normally Closed
The inactive state of an input is either normally open or normally closed. If it is **Normally Open**, toggle this button **Off** by deselecting it. If it is **Normally Closed**, toggle it to **On** by selecting it.

NOTE

Ask your installer how the input point is wired. Door DIs are usually wired "normally closed" and exit request DIs are usually wired "normally open."

Input Enabled
Toggle this button **On** by selecting it, to allow this input to activate.

NOTE

If an input is to be used as an **Exit Button** input in an area designated as **M2MR with Door Control**, the **Normally Closed** and **Input Enabled** buttons must be deselected (the default).

Routing

Displays the selected routing where messages about this input are displayed.

Click the **Routing** button to display the **Routings** picklist (Figure 12-5). Select the desired routing, then click **Close**. The typical routing is **None** which means that it is not routed.

Input Group

Displays the selected input group for this input.

Click the input group button to display the **Ingroups** picklist (Figure 12-5). Select the desired **Input Group**, then click **Close**.

NOTE

In both single input groups and in a hierarchy of input groups, all inputs in any given group or hierarchy must be associated with the same micro.

See Chapter 13 - Categories, Areas, Readers, and Doors, where the "Forced Open" and "Open Too Long" door input groups are explained. Use the **Doors** form to assign a door DI.

NOTE

1: Assign a door exit button to the same input group as the reader for that door.

2: Do not assign a door DI to an input group.

Input

Input Point
Toggle this button **On** to configure this input as a standard input point.

Elevator Point
Toggle this button **On** to configure this input as an elevator input. For more information, see Chapter 22 - Elevator Control.

Route Definition

Displays the selected route definition for this input. This route definition is used for **Activity Monitor** routing.

Click the **Route Definition** button to display the **Route Definition** picklist. Select the desired route definition, then click **Close**.

If this field is left blank, this input's activity will be routed to all terminals.

NOTE

If an input group is unselected from an input and a new input group is assigned to the input, the micro has to be reset.

Facility

Click **Facility** to display the facilities picklist. By default, the input record will be assigned the same facility as the micro to which the input is assigned, however, you do have the ability to manually re-assign an input's facility. This might be desirable in a case where one micro controls more than one facility, for instance two companies occupying the same building that use separate doors for entry / exit. For more information, see Chapter 5 - Facilities and Facility Profiles.

Figure 12-5. Inputs Form with Picklists

NOTES

Categories, Areas, Readers, and Doors

Chapter 13

Overview

The Picture Perfect system supports readers that control access to doors and areas. An area contains a group of one or more readers and doors. Categories assigned to the area act as locks. A badge used with a reader acts as a key to a door if one of the categories on the badge matches one of the categories in the area.

Prerequisites

The following Picture Perfect forms are prerequisites:

Forms	Purpose
PRINTER ROUTINGS TERMINALS	To log alarms to a printer and display on a console.
PERMISSION GROUPS PERMISSIONS OPERATORS	To authorize operators to respond to alarms, assign categories to areas, and areas to readers and doors.
INPUTS INGROUPS OUTPUTS OUTGROUPS	To allow door inputs and door outputs to activate.
ROUTE DEFINITIONS ROUTE POINTS	To allow area activity monitor routing for badge activity.

What You Will Be Doing

This chapter shows you how to create areas of access control, how to assign categories that "lock" an area, how to group readers into different areas, and how to assign categories to badges that "unlock" an area.

How Categories and Areas Work

Categories are both the locks and the keys of the Picture Perfect system. A category assigned to an area can act as a lock on the doors in that area. When you assign that same category to a badge, the category functions as the badgeholder's key to those doors. If the **Increased Category** feature was selected during installation, 96 categories are available for assignment to a badge, and 32 categories for assignment to an area or an area event. Otherwise, 32 categories are available for assignment to a badge, and 10 categories are available for assignment to an area or an area event.

NOTE

To System Administrator:

Plan your system using floor plans that locate the readers and areas controlled by the Picture Perfect system, as in Figure 13-1.

- Identify the logical areas of access control.
- Determine the categories of access that will allow badges into each area.

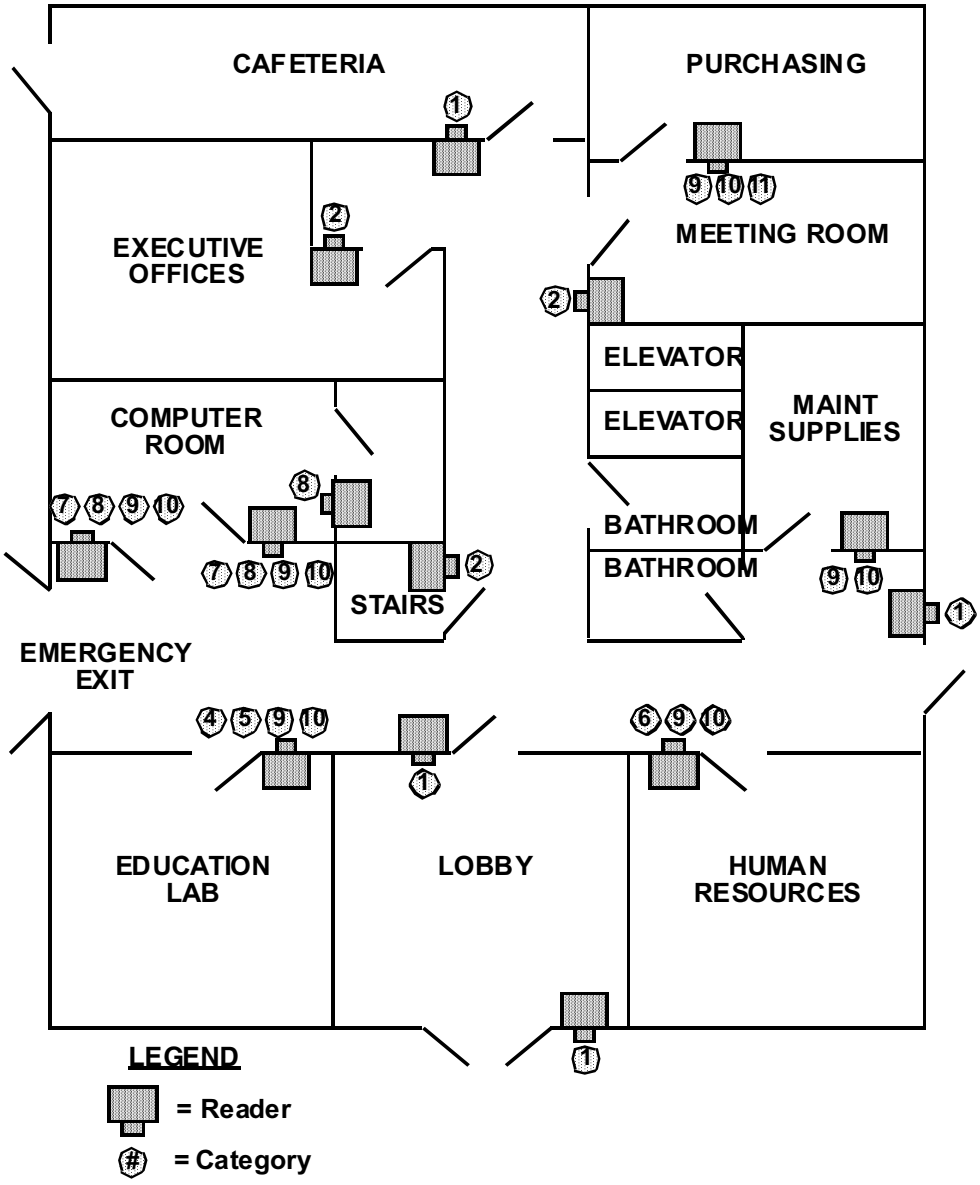


Figure 13-1. Site Map with Access Control Areas

Identify Areas

An area is a group of one or more readers. Identify functions within the facility that require the same kind of access control and give descriptive names to these areas. For example:

```
Accounting
MIS
R&D
Lobby
Stairwells
Cafeteria
```

Identify Categories

Identify each group of people who use the facility and assign a category to each group. For example, categories describe the users by type, title, group, or shift:

```
Temporary
Lab Technicians
Chief Engineer
Engineering
Accounting
Computer Room 08:00-17:00
Computer Room 24 Hrs.
Computer Room 16:00 - 04:00
```

To restrict area access to specific badges within defined time ranges, create a category that includes a timeframe. Assign this category to each badge required to access this area during the timeframe described in the category. Then create an **Area Event** to schedule the category to be assigned to the area during the specified time frame.

Example 1: If the badgeholder is a cost accountant required to access the accounting department and the computer room (8 AM - 5 PM), assign the following two categories to this badge, and make sure that the same categories are assigned to the respective areas during the specified time frame:

```
Accounting
Computer Rm. 08:00-17:00
```

Example 2: If the badgeholder is a contractor required to clean the building from 5 PM to midnight, but required to clean the Computer Room and other high-security places only from 5 PM to 6 PM, assign the following two categories to the badge:

```
General Areas Cleaning 17:00-23:59
High Security Cleaning 17:00-18:00
```

The names should be descriptive of the area for which access is to be given—the "lock" or "key" it represents. For example, if you plan to schedule areas to change categories at various times during the day, use a category name that indicates when the category is valid for the area.

Use any descriptive name for a category. It may be easier to use a name that indicates the kinds of locks and keys the category represents. For example, **`BLDG 4 - High Security`** is more meaningful than **`1234-3`**.

Here are some examples of categories and how they may be used:

Exterior Access . . . . . Used for all areas that control exterior access and the majority of badgeholders who use the outer doors.

Bldg 1 Lobbies 7x24 . . . . . Used for lobby access at a specific building seven days a week, 24 hours a day.

Bldg 1 Lobbies 07:00-19:00 M-F. . . . . Used for the same building but scheduled to be valid on that area only from 07:00 to 19:00 Monday through Friday. In this case, the description indicates how this category is used. See "Area Events" on page 16.14 of Chapter 16 - Schedules and Modes.

Tape Vault . . . . . Used to designate a high security area and assigned to only those badges with permission to enter this restricted area.

Assigning Categories to Badges, Areas, and Area Events

There are various strategies for assigning categories, and the system is flexible enough to allow you to use several different methods at the same time. Here are some examples.

Example 1: If an area that you have named **HIGH RISK** includes the Computer Room, the Archive Tape Room, and the MIS Equipment Room, you may decide to assign the following categories, based on job titles:

```
MIS Director
Comptroller
CEO
```

To provide each of the above categories of people access to the area, assign each badge (using the **Badges** form) at least one of the categories associated with that area, and assign the area (using the **Area** form) all three of the above category names.

Example 2: Instead of using separate categories based on job titles, assign all top-level people to a category named **HIGH RISK**. To provide top-level people access to this area, just assign the **HIGH RISK** category to each of their badges.

Example 3: Another way of assigning categories is by shift:

```
MIS All Hrs
MIS 8-5
Accounting 24 Hrs
Accounting 8-5
Contractor 7-10
```

If you assign some categories according to shift, you can schedule areas to have the categories only during certain hours and days of the week.

See "Chapter 16 - Schedules and Modes" for more ways to use categories. For example, scheduling categories on areas to control when badgeholders can access an area, or scheduling how long a contractor is allowed access to each area to control where and when the job starts and ends.

Categories are position sensitive; if you plan to schedule categories, assign categories in a consistent order. See “Area Events” on page 16.14 of Chapter 16 - Schedules and Modes.

Categories

Use the **Categories** form (see Figure 13-2) to create descriptions of each group of people who use the facility. Categories describe users by **type**, **title**, **group**, or **shift**. Then associate each category with one **Permission Group**. The categories form a picklist that is used on the **Areas**, **Badges**, **Generator**, and **Area Events** forms.

NOTE **A facility map helps identify categories of people who require access.**

The permission assigned to an operator determines what categories that operator can assign. See Chapter 6 - Permissions and Operators.

Setup

➤ **To create a category record:**

1. Select **Access**, then **Category**.
2. Click **New**.
3. Complete the **Category** form. For a description of each field, see “The Categories Form” on page 13.7.
4. Click **Save**.
5. Click **New** to add another category.

The Categories Form

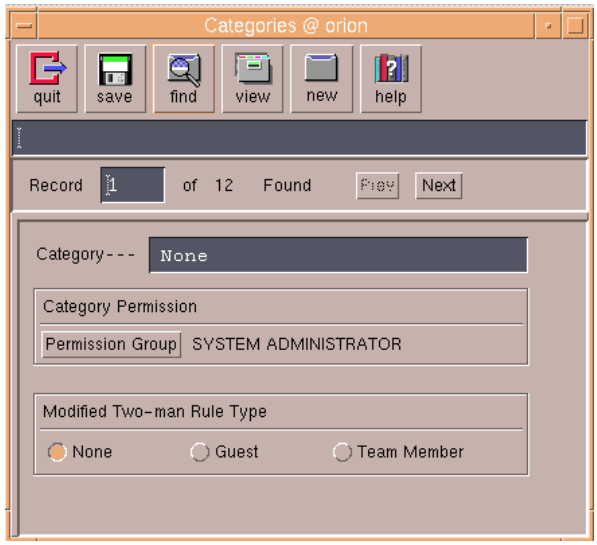


Figure 13-2. Categories Form

Category

Enter a category description up to 30 alphanumeric characters long

Category Permission

Permission Group
Click the **Permission Group** button to display a picklist of **Permission Groups**. Select the desired **Permission Group** for this category, then click **Close**.

Modified Two-man Rule Type (M2MR)

These buttons identify M2MR category types and will only be available to operators with **Occupancy Control** permission granted. See "Occupancy Control" on page 13.17. The M2MR category type defines different levels of access to M2MR controlled areas as indicated below. Entry to an M2MR controlled area is restricted by the M2MR category type of the categories on the badge and the area.

None
Access to an M2MR controlled area is not permitted while M2MR control is enabled.

Guest
A Guest is not allowed entry to an M2MR controlled area unless two (2) team members are already present in the area.

Team Member

If the M2MR controlled area is empty, a Team member is allowed entry only with a second Team member. Additional team members can enter individually after the initial two (2) team members are present in the M2MR controlled area. Additionally, the final two (2) team members will not be permitted to exit until no Guests remain.

Managing Category Assignment

Use the **Areas**, **Badges**, **Generator**, and **Area Events** forms to assign new categories or to change or remove categories already assigned.

Each of these forms contain a **Categories** list box, that display the active categories assigned to the selected badge, area, or area event.

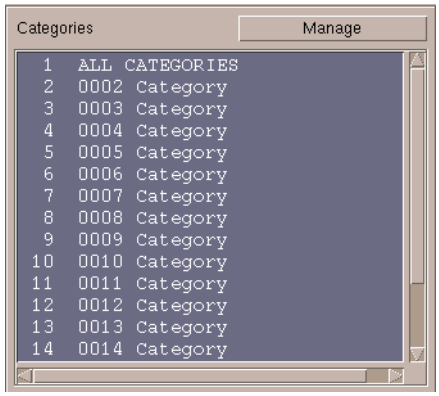


Figure 13-3. Categories List Box

Click the **Manage** button to display the **Category Manager** window, Figure 13-4, from which you may add or remove a category in a slot. You may also apply a filter to limit the number of categories, displayed in the Category Manager's category list.

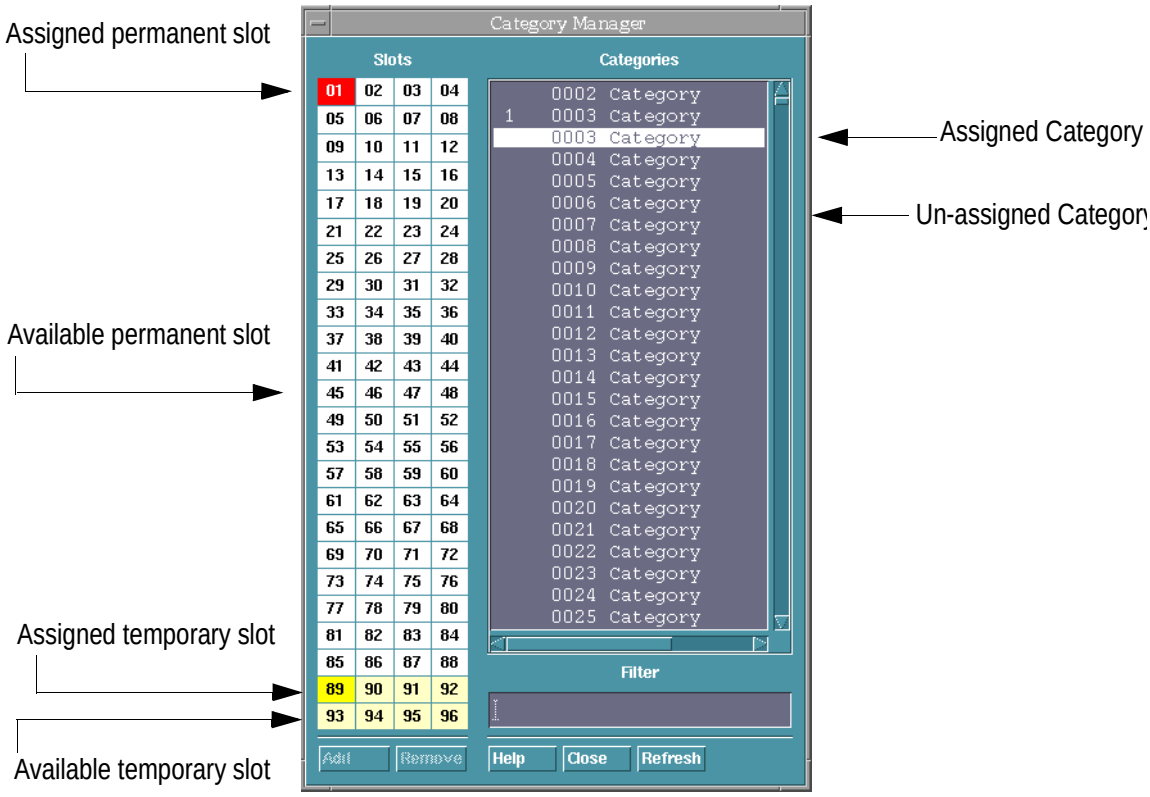


Figure 13-4. Category Manager Window

Slots

This grid contains all the category slots. Permanent category slots which have been assigned a category, and are therefore no longer available for selection, are highlighted in red. Available permanent category slots are shown in white.

Temporary category slots that are currently assigned a temporary category schedule, are highlighted in yellow. Available temporary category slots are shown in off-white. These slots should not be used for permanent assignments.

Categories

This is a list of all available categories in alphabetical order. Categories which have already been assigned, have their slot number indicated to their left. Active categories, assigned to a temporary category schedule, have a letter **T** after their slot number.

Filter

Enter a search criteria in the **Filter** field and click on the **Refresh** button or press Enter. The search criteria entered in this field can be a specific match, such as **`West Lobby`**, or a pattern, such as **`Parking Lot*`**.

Add

Click on this button to add a permanent category to a slot. The category list on the **Badges** form will be refreshed and will display the new category. This button is enabled when an available category and an empty slot number are selected. By default, the next empty slot number is selected when you select an available category.

Remove

Click on this button to remove a permanent category from a slot. The category list on the **Badges** form will be refreshed will no longer display the removed category slot number. This button is enabled if an active category or the corresponding slot number is selected.

Close

Click this button to close the **Category Manager** window.

Refresh

Click this button to update the category list display after adding categories from the **Category** form.

Help

Click this button to display the HTML help screen for the **Category Manager** window.

➤ **To add a permanent category to the next available slot:**

1. Click the **Manage** button to display the **Category Manager** window.

   Result: A list of all available categories, in alphabetical order, will display. If a category has been assigned a slot, the slot number will be displayed beside it.

2. Select the desired category.

   Result: The next available slot will be highlighted.

3. Click **Add**.

   Result: The category list on the main form will be refreshed and will display the new category and the slot number to which it was assigned.

4. Click **Close** to return to the main form.

➤ **To add a permanent category to a specific available slot:**

1. Click the **Manage** button to display the **Category Manager** window.

   Result: A list of all available categories, in alphabetical order, will display. If a category has been assigned a slot, the slot number will be displayed beside it.

2. Select the desired category.

   Result: The next available slot will be highlighted.

3. Select the slot to which you want to assign it.

   Result: The highlight will move to the new slot.

4. Click **Add**.

   Result: The category list on the **Areas** form will be refreshed and will display the new category and the slot number to which it was assigned.

5. Click **Close** to return to the **Areas** form.

➤ **To remove a category from a slot:**

1. Click the **Manage** button to display the **Category Manager** window.

   Result: A list of all available categories, in alphabetical order, will display. If a category has been assigned a slot, the slot number will be displayed beside it.

2. Select the category or slot you wish to remove.

   Result: The slot to which the category is assigned, or the category to which the slot is assigned, will be highlighted.

3. Click **Remove**.

   Result: The category list on the **Category Manager** window will be refreshed and the category will be displayed with no slot number beside it.

   Result: The category list on the main form will be refreshed and the category will no longer be displayed.

4. Click **Close** to return to the main form.

➤ **To replace an existing category:**

1. Click the **Manage** button to display the **Category Manager** window.

   Result: A list of all available categories, in alphabetical order, will display. If a category has been assigned a slot, the slot number will be displayed beside it.

2. Select the category you wish to change.

   Result: The slot to which the category is assigned will be highlighted.

3. Click **Remove**.

   Result: The category list on the **Category Manager** window will be refreshed and the category will be displayed with no slot number beside it. The category list on the main form will also be refreshed and the category will no longer be displayed.

4. Select the category and the new slot to which you want to assign it.

5. Click **Add**.

   Result: The category list on the main form will be refreshed and will display the category and the new slot number to which it was assigned.

6. Click **Close** to return to the main form.

Areas

A single area may be assigned to multiple readers and doors. For example, the Accounting Management Area may be assigned to a reader using the **Area** button on the **Readers** form. The same area may be assigned to a door using the **Area** button on the **Doors** form. Additional readers and doors may be assigned to the same area, but an individual reader or door can only belong to one area.

The permission assigned to an operator determines which areas that operator can assign to readers and doors. See Chapter 6 - Permissions and Operators.

When you assign an area to a door or a reader, the categories (and controls) defined for the area become valid for all doors and readers that belong to that area.

Some of the controls on the **Areas** form are also available on the **Doors** form and the **Readers** form. In some cases, this may allow an individual door or reader to have controls that differ from the assigned area. Table 13-1 lists the controls that **Areas**, **Readers**, and **Doors** have in common.

Table 13-1: Common Control Fields of the Areas, Readers, and Doors

Areas	Readers	Doors
Scheduling	Scheduling	Scheduling
Shunting	Shunting	
Physical State	Physical State	
Logical State	Logical State	

NOTE

A setting of **Disabled** in any of these fields on any of these forms overrides a setting of **Enabled** in the same field on another form. For example, if **Shunting** is **Enabled** for an area, but a reader in that area has **Shunting Disabled**, the **Shunting** feature will not work for that reader. **Shunting** must be set to **Enabled** on both the **Areas** and **Readers** forms in order for it to work.

Setup

➤ **To create an area:**

1. Select **Access**, then **Areas**.
2. Complete the **Areas** form. For details on each field, see "The Areas Form" on page 13.14.
3. Click **Save**.
4. Click **New** to add another **Area**.

The Areas Form

The following is a list of fields that may require additional information for you to complete. There is no required sequence for you to follow.

Divide your site into areas that require access control. Assign an area to each reader that protects that area. Before assigning categories to areas, read the “lock and key” discussion in “How Categories and Areas Work” on page 13.2.

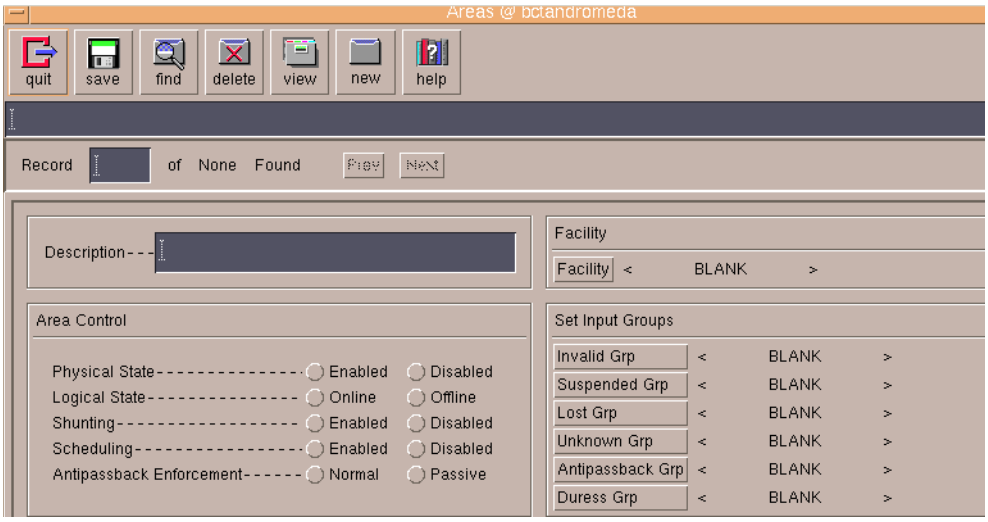


Figure 13-5. Areas Form - Top

Description

Type an area **Description** up to 30 alphanumeric characters long; for example, Lobby. The lobby area may include more than one location if the facility has multiple entrances or buildings.

An area may be one contiguous physical space (such as the Computer Room) or it may be a number of separate but related spaces (such as Computer Room, MIS Lab, Computer Vault, MIS Equipment Room) that require the same level of access control.

Area Control

Use the radio buttons to specify the **Area Control** setting for each of the following items:

Physical State
Enabled indicates that the system allows readers in this area to read badges. **Disabled** indicates that the system does not allow the area’s readers to operate.

Logical State
Online indicates that the readers in this area operate in normal mode. **Offline** indicates that the readers are not allowed to unlock doors, but are allowed to read badges, pass badge data, route and archive access messages, and activate associated alarms.

Shunting
Enabled indicates that the system allows use of keypad override of shunt time on doors and readers in this area. **Disabled** indicates that shunting is not allowed.

This has no effect on **Door Held Open** or **Door Forced Open**. See "Held Open Sensing" on page 13.37 (the **Doors** form) and "Shunting" on page 13.28 (the **Reader** form).

Scheduling
Enabled indicates that the system recognizes scheduled changes associated with this area. **Disabled** indicates that the system ignores scheduled changes.

Antipassback Enforcement
If antipassback is set to **Normal** for this area, it works in conjunction with the antipassback status setting on each badge used to access this area. If set to **Passive**, antipassback will not be enforced in this area which means that access will be granted regardless of the antipassback status. However, violations will still be reported.

See "Antipassback Status" on page 14.23 (the **Badges** form).

Facility

Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

Set Input Groups

Select one **Input Group** for each error condition. These **Input Groups** will activate an associated alarm when the error condition occurs.

NOTE

Only Trigger on Input (non-boolean) input groups are displayed in the picklists. See "Boolean Type" on page 9.5 of Chapter 9 - Input and Output Groups.

Invalid Grp
The input group to trigger when an invalid badge error condition occurs:

Deleted - The badge presented has been deleted from the Picture Perfect database.

Invalid PIN number - The PIN number entered in the keypad reader does not match the PIN number in the badge record.

Category mismatch - The category identified in the badge record does not match the area category where the badge read occurred.

Click the **Invalid Grp** button to display the **Ingroups** picklist. Select the desired **Input Group**, then click **Close**.

Suspended Grp
The input group to trigger when a suspended badge read occurs. A suspended badge is one that has been identified in its badge record as suspended.

Click the **Suspended Grp** button to display the **Ingroups** picklist. Select the desired **Input Group** for a suspended badge read, then click **Close**.

Lost Grp
The input group to trigger when a lost badge read occurs. A lost badge is one that has been reported and identified in its badge record as lost.

Click the **Lost Grp** button to display the **Ingroups** picklist. Select the desired Input Group for a lost badge violation, then click **Close**.

Unknown Grp
The input group to trigger when an unknown badge read occurs. An unknown badge is one whose BID (The hidden number that uniquely identifies each badge) is not recorded in the Badges table of the Picture Perfect database and therefore is not recognized by the system.

Click the **Unknown Grp** button to display the Ingroups picklist. Select the desired **Input Group** for an unknown badge violation, then click **Close**.

Antipassback Grp
The input group to trigger when an antipassback violation occurs. When used in conjunction with antipassback readers, the antipassback status (**In**, **Out**, or **Privileged**) of a badge plus a category match, regulate its ability to open a door. For example, if a badgeholder starts to enter an antipassback area by swiping his badge, then allows the door to close without entering, he will not be able to re-enter that area because the system has already registered him as In.

Click the **Antipassback Grp** button to display the Ingroups picklist. Select the desired **Input Group** for an antipassback violation, then click **Close**.

Duress Grp

The input group to trigger when a valid duress-code badge read occurs. Duress codes can be used with **Badge and Keypad** or **Keypad** readers to alert the system that a valid badge read was made under forced conditions or duress.

Click the **Duress Grp** button to display the **Ingroups** picklist. Select the desired **Input Group** for a duress-code entry, then click **Close**.

NOTE Do not assign a reader's valid input group to one of the above groups. This will result in an unlocked door.

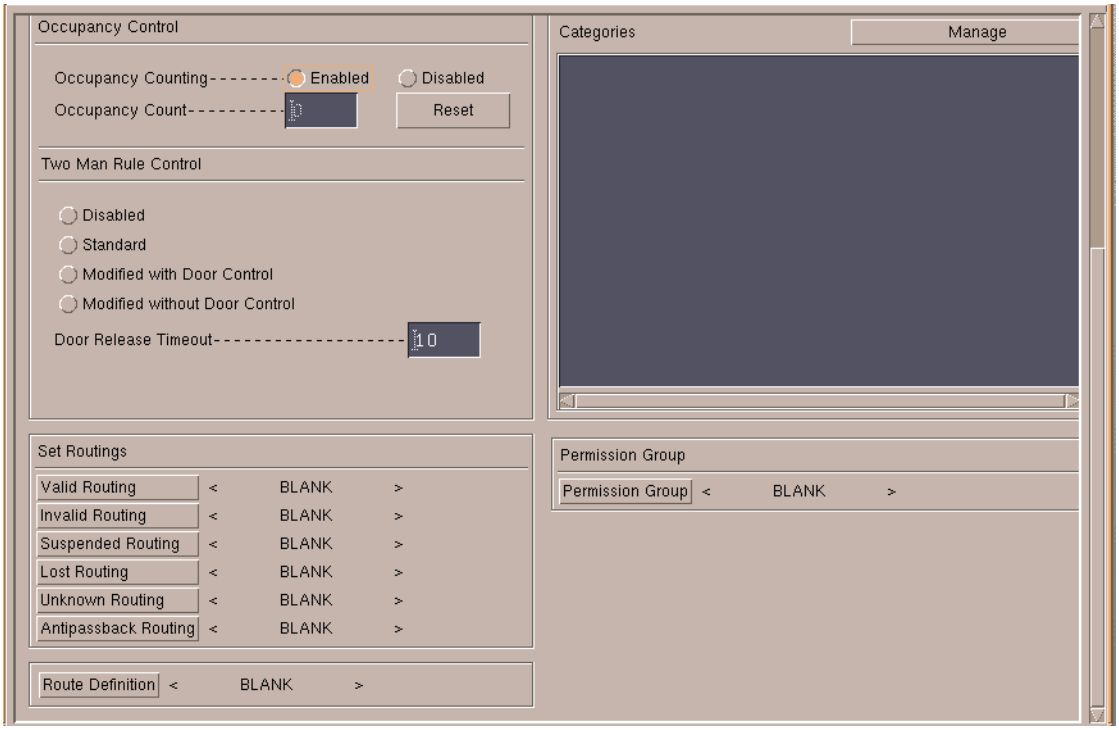


Figure 13-6. Areas Form - Bottom

Occupancy Control

Occupancy Counting

The ability to control occupancy counting is available only if the operator has **Occupancy Control** permission granted. When enabled,

it allows the number of persons in a controlled space to be monitored. The occupancy count is reset to zero and the two-man rule radio buttons are enabled. When disabled, the two-man rule mode is forced to **Disabled** and the two-man rule radio buttons are grayed out and not selectable. Picture Perfect updates the occupancy count when a valid entry or exit to/from the area occurs. The default setting for **Occupancy Counting** is disabled.

Occupancy Count
The value in this field shows the current occupancy count for the area.

Reset
This button is enabled only if the operator has **Occupancy Control** permission granted and occupancy counting has been enabled. It allows the occupancy count for an area to be reset to zero.

Two-Man Rule Control

These radio buttons are enabled only if the operator has **Occupancy Control** permission granted and **Occupancy Counting** has been enabled. Two-man rule (2MR) or modified two-man rule (M2MR) can only be enabled if the **Occupancy Count** is zero. If the operator violates this rule, an error message will appear in the status line (see Figure 3-4. Example of a Form on page 3.6.) The record cannot be saved unless the count is reset to zero or two-man rule mode is set to **Disabled**.

Disabled
Select this radio button to deactivate two-man rule mode if it is currently enabled.

Standard
Select this radio button to activate the standard two-man rule mode. This ensures that at least two badge holders occupy a given controlled space.

Modified with Door Control
Select this radio button to activate the modified two-man rule mode which restricts access to a controlled area based on the **M2MR Category Type**. The first two badge holders to enter a controlled space must be of the **Team Member** personnel type and at least two team members must be present in the controlled space until all **Guests** have exited. Additionally, a team member within the controlled space must press a door release button in order to allow entry to any subsequent badge holders. The door release button must be pressed within the time specified in the **Door Release Timeout** field or the door will not be unlocked.

Modified without Door Control
Select this radio button to activate the two-man rule mode which restricts access to a controlled area based on the **M2MR Category Type**. The first two badge holders to enter a controlled space must be of the **M2MR Type** and at least two **Team** members must be present in the controlled space until all **Guests** have exited.

Door Release Timeout
This field is enabled only if the operator has **Occupancy Control** permission granted. Valid values range from 0 (no timeout) to 32,767 seconds.

Set Routings

Select routings for the following types of conditions:

Valid Routing
Click the **Valid Routing** button to display the **Routings** picklist. Select the desired routing for a valid badge read, then click **Close**.

Invalid Routing
Click the **Invalid Routing** button to display the **Routings** picklist. Select the desired routing for an invalid badge read, then click **Close**.

Suspended Routing
Click the **Suspended Routing** button to display the **Routings** picklist. Select the desired routing for a suspended badge read, then click **Close**.

Lost Routing
Click the **Lost Routing** button to display the **Routings** picklist. Select the desired routing for a lost-badge read, then click **Close**.

Unknown Routing
Click the **Unknown Routing** button to display the **Routings** picklist. Select the desired routing for an unknown badge read, then click **Close**.

Antipassback Routing
Click the **Antipassback Routing** button to display the **Routings** picklist. Select the desired routing for a valid antipassback transaction, then click **Close**.

Route Definition
Click the **Route Definition** button to display the **Route Definitions** picklist. Select the desired **Route Definition** for this area, then click **Close**. This **Route Definition** is used for **Activity Monitor** routing. If this field is left blank, this area's activity will be routed to all terminals.

Categories

If the **Increased Category** feature was selected during installation, 32 categories can be assigned to an area or an area event. Otherwise, only 10 categories can be assigned. This list box contains the active categories, ordered by slot number. To access an area, a badge must match at least one category that is assigned to that area.

NOTE

This field is position sensitive when used in conjunction with area category schedules.

Manage

Click the **Manage** button to display the **Category Manager** window, Figure 13-4, from which you may add, remove, or replace a category in a slot. For more information on Category Management, see “Managing Category Assignment” on page 13.8.

Readers

Use the **Readers** form to define how each reader operates and to associate the reader with an area, a micro, and input group so that the system can process reader activity.

NOTE Readers may also be set up using the Data Generator. See Chapter 15 - Generator.

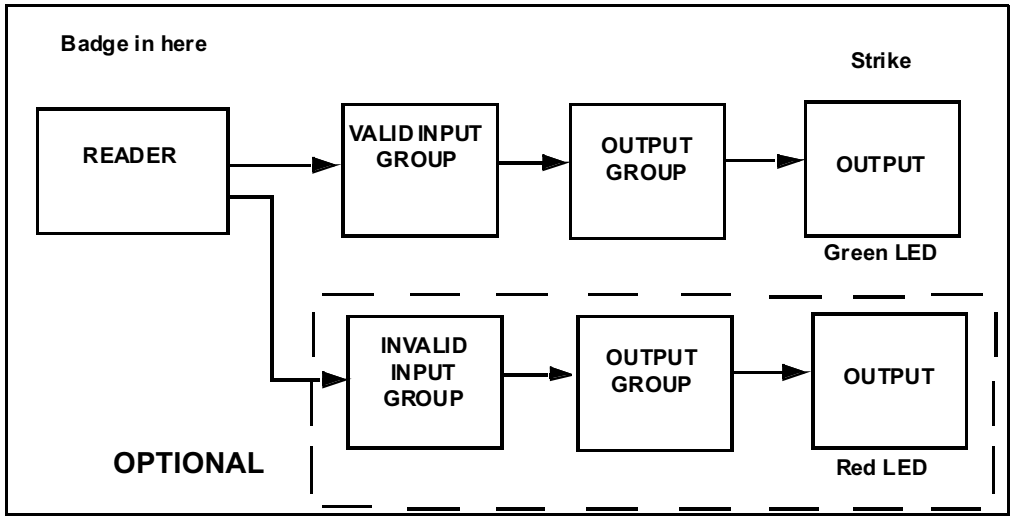


Figure 13-7. Common Reader Setup

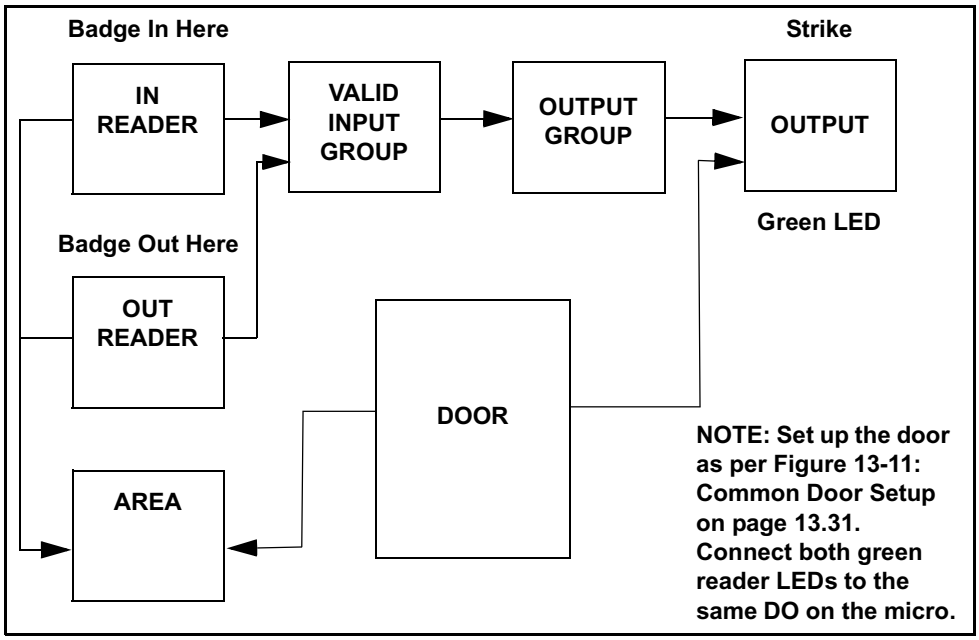

Badge In Here
Strike
IN READER
VALID INPUT GROUP
OUTPUT GROUP
OUTPUT
Green LED
Badge Out Here
OUT READER
DOOR
AREA
NOTE: Set up the door as per Figure 13-11: Common Door Setup on page 13.31. Connect both green reader LEDs to the same DO on the micro.

Figure 13-8. In/Out Reader Setup with Single Door

Setup

➤ **To define a reader:**

1. Select **Devices**, then **Readers**.
2. Click **New**.
3. Complete the **Readers** form. For details on each field, see “The Readers Form” on page 13.22.
4. Click **Save**.
5. Click **New** to add another reader.

The Readers Form

The following is a list of fields that may require additional information for you to complete. The list is in the order that the fields appear on the form. There is no required sequence for you to follow. Refer to Figure 13-9 for the top left-hand portion of the **Readers** form.

Description

Type a reader **Description** up to 30 alphanumeric characters long; for example,
`00-1-00 LOBBY DOOR`.

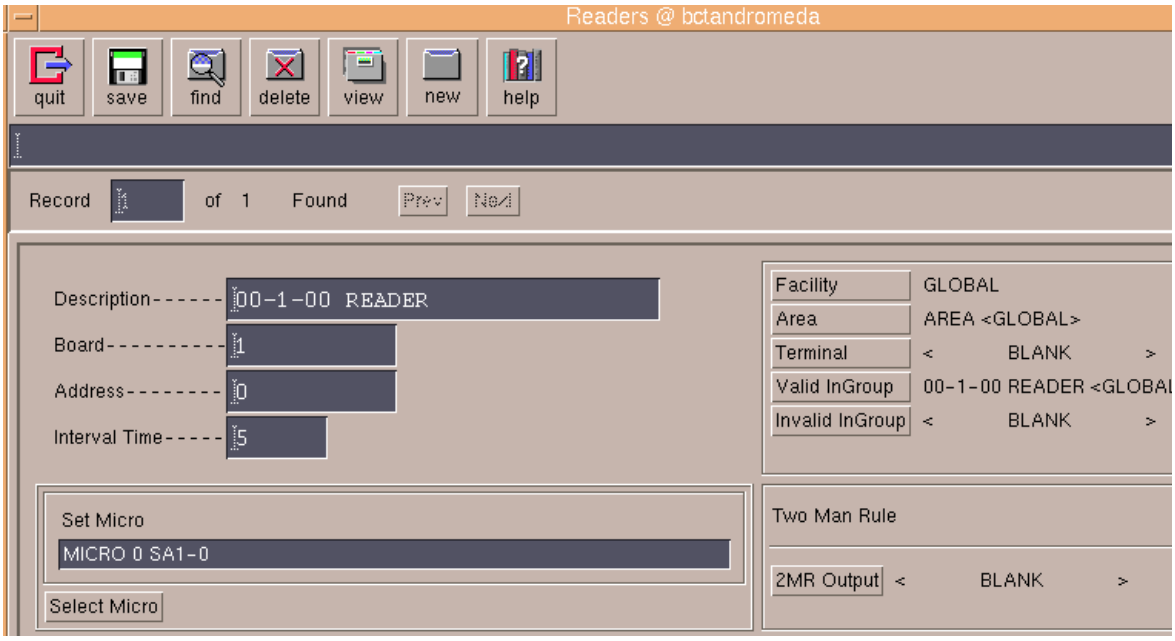


Figure 13-9. Readers Form (Top)

Board

Type the board number of the reader board where this reader is connected. See Table 12-3, "Micro/4 Wiring Chart - Inputs," on page 12.11 and Table 12-4, "Micro/5 Wiring Chart - Inputs," on page 12.12 of Chapter 12 - Inputs and Outputs.

Address

Type the physical address of this reader on its reader board. See Table 12-3, "Micro/4 Wiring Chart - Inputs," on page 12.11 and Table 12-4, "Micro/5 Wiring Chart - Inputs," on page 12.12 of Chapter 12 - Inputs and Outputs.

Interval Time

Type the maximum number of seconds allowed to elapse between stages of a transaction, such as entering a PIN number in a keypad reader after a badge swipe, and/or between separate badge transactions on a double-badge reader. (See Chapter 26 - Double-Badge Transaction for details on this feature.) The time starts after the first transaction.

Set Micro

Click the **Select Micro** button to display the **Micros** picklist. Select the micro where this reader is wired, then click **Ok**. The selected micro is displayed under **Set Micro**.

Facility

Click the **Facility** button to display the facility picklist. The facility set determines which facility will be able to view the associated badge and trace activity on the **Activity Monitor** if the **Badge** and **Trace** options are selected.

By default, the reader record will be assigned the same facility as the micro to which the reader is assigned however, you do have the ability to manually re-assign a reader's facility. This might be desirable in a case where one micro controls more than one facility, for instance two companies occupying the same building that use separate doors for entry/exit. For more information, see Chapter 5 - Facilities and Facility Profiles.

Area

Click the **Area** button to display the **Areas** picklist. Select the area that this reader protects, then click **Close**. The area that you select should have categories and controls appropriate for this reader.

Terminal

If this reader functions as a badge-issue reader, select a terminal, otherwise leave blank. Note that a terminal can only be assigned to one reader. Click the **Terminal** button to display the **Terminals** picklist. Select the desired terminal, then click **Close**. A reader can only be assigned to one terminal.

Valid InGroup

Select an input group to be triggered when a valid badge is swiped through this reader. Click the **Valid Ingroup** button to display the **Ingroups** picklist. Select the desired input group, then click **Close**.

NOTE

Only Trigger on Input (Individual) which are non-boolean input groups are displayed in the picklist. See “Boolean Type” on page 9.5.

To allow doors to open for valid badges, be sure to assign an input group that is associated with the output group that controls the appropriate door strike output.

Invalid InGroup

Select an input group to be triggered when an invalid badge is swiped through this reader. Click the **Invalid Ingroup** button to display the **Ingroups** picklist. Select the desired **Input Group**, then click **Close**.

Two Man Rule

Click **2MR Output** to open a list box from which you may optionally select an output to associate with an indicator such as a blinking light. The indicator device is activated when the first of two valid badge reads for entry or exit from a two-man ruled enabled area has occurred at the reader. When the indicator device is activated, the second person should present their badge at the reader before the timeout period expires in order to unlock the door to permit entry or exit from the area. The indicator is deactivated when a timeout or second valid badge read or invalid badge read occurs at the reader. The **Two Man Rule Output** is a digital output (DO) point configured to control the indicator device. The value in the drop-down list may only be changed by an operator with **Occupancy Control** permission granted.

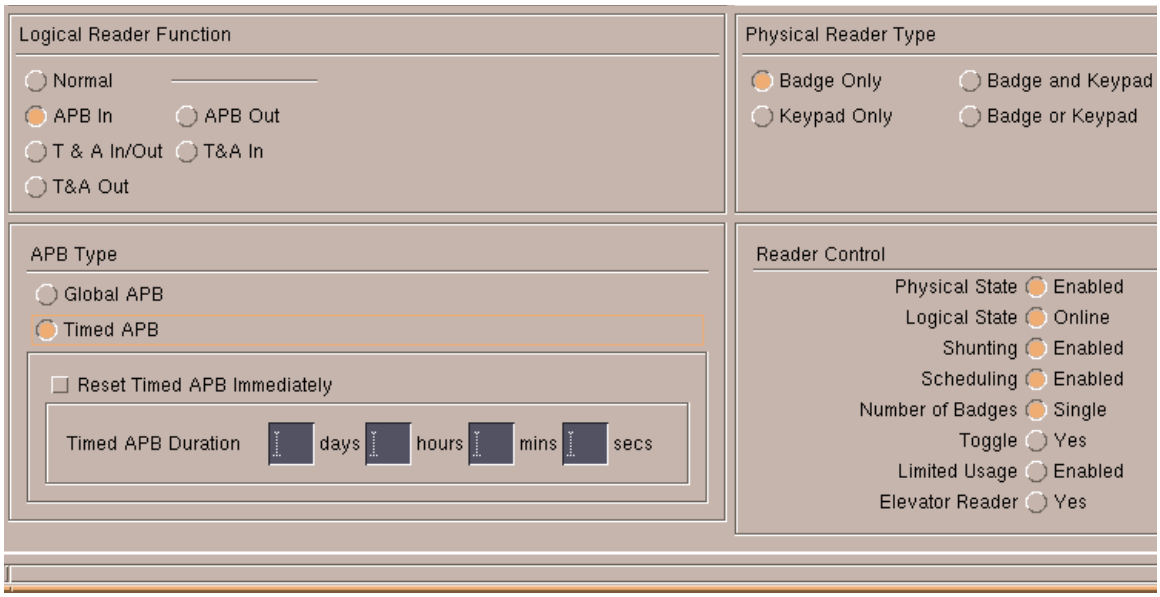


Figure 13-10. Readers Form (Bottom Right)

Logical Reader Function

Select the desired **Logical Reader Function** for this reader:

Normal
Used to grant access into an area.

Anti-Passback In
Used to log a badgeholder "in" when entering.

Anti-Passback Out
Used to log a badgeholder "out" when exiting.

Time and Attendance In/Out
Used to log a badgeholder "in" and "out" using the same reader (such as the Model 100 Weigand reader) by swiping the card the normal way for "in" and reversing the card or turning the card backwards for "out".

Time and Attendance In
Used to log a badgeholder "in" at the start of a work shift.

Time and Attendance Out
Used to log a badgeholder "out" at the end of a work shift.

APB Type

If the **Logical Reader Function** is set to **APB In** or **APB Out**, select the desired **APB Type** for this reader:

Global APB
Used as the default, this allows the reader to function as a normal APB reader.

Timed APB
Used to designate the reader as a **Timed APB** reader in which a badgeholder's APB status will be set to **In** or **Out** and will return to **Neutral** after a defined period of time. A **Timed APB** reader is useful in a site where a badgeholder may enter a site by going through an **APB In** reader but is not required to exit the site by going through an **APB Out** reader. If this option is selected, a **Timed APB Duration** must also be defined. A **Timed APB** status is local to the micro.

Reset Timed APB Immediately
Used to reset the **Timed APB** status back to **Neutral** immediately following a badge swipe.

Timed APB Duration
Enter a value to represent how long a badgeholder's **Timed APB** status will be set when his badge is used on the reader. The **Timed APB Duration** cannot exceed one day. A duration of 0 allows the micro to reset the status to **Neutral** immediately, producing the same effect as **Reset Timed APB Immediately**.

Swipe and Show Control

This feature is only visible when the optional Image package is installed. See page 28.6 for more details on **Swipe and Show**.

Swipe and Show
Select **Enabled** to enable **Swipe and Show** on this reader. Select **Disabled** to disable **Swipe and Show** on this reader.

NOTE

A reader cannot be defined as **Toggle** when **Swipe and Show** is **Enabled**. See "Toggle" on page 13.28.

Authorization Required
Select **Yes** to designate a reader that will display a photo in a popup window beside the **Activity Monitor** (see Figure 28-1) and require an operator to unlock a door. Select **No** to designate a reader that will display a photo in a popup window beside the **Activity Monitor** (see Figure 28-1) and will unlock a door without operator intervention.

NOTE

The **Yes** and **No** buttons are not available unless **Swipe and Show** is **Enabled**. Access cannot be granted through readers defined as **Authorization Required** while communications to the micro are down.

Physical Reader Type

Select the desired physical reader type for this reader:

Badge Only
A reader used only to read badges using a badge swipe.

Keypad Only
A reader used only as a keypad, where, in lieu of a badge swipe, the badge encode number must be entered using the keypad. Press * or +, enter the badge encode number, then press #.

Badge and Keypad
A badge reader used in conjunction with a keypad, where a PIN, a duress code, a shunt override code, or an alarm response code can be entered in addition to the badge swipe. See the procedures for each type of code below:

- PIN or Duress Code

  1. Swipe the Badge.
  2. Press ***** or **+** , enter the PIN or Duress Code, then press **#**.

- Shunt Override Code

  1. Press ***** or **+**, enter the Shunt Code, then press **#**.
  2. Swipe the Badge.
  3. Press ***** or **+**, enter the PIN or Duress Code, then press **#**.

- Alarm Response Code

  1. Press ***** or **+**, enter the Alarm-Response Code, then press **#**.
  2. Swipe the Badge.
  3. Press ***** or **+**, enter the PIN or Duress Code, then press **#**.

Badge or Keypad
The reader can be used either as a badge reader or a keypad. If **Badge** is selected, then the reader is used only to read badges using a badge swipe. If **Keypad** is selected, the badge encode number is entered using the keypad in lieu of a badge swipe. Press * or +, enter the badge encode number, then press **#**.

Reader Control

Use the radio buttons to specify the reader control setting for each of the following items:

Physical State
Enabled means this reader is allowed to read badges. **Disabled** means the reader cannot read badges.

NOTE If a reader is not operational, set physical state to **Disabled**.

Logical State
Online permits the normal operating mode for this reader. **Offline** means the reader is allowed to read badges, pass badge data, route and archive access messages, and activate associated alarms—but is not allowed to unlock associated doors.

Shunting
Enabled means this reader allows the use of keypad override of shunt time. **Disabled** means the reader will not allow shunting. When enabled, the **Alarm Shunting** feature allows a valid badgeholder to keep a door open (for the time specified, in minutes, in the **Keypad Shunt Time** field of the **Doors** form) without getting a **Door Held Open** alarm. The badgeholder enters the shunt code (defined on the **Micros** form) using the reader keypad, then presents his badge, then enters his PIN number

Scheduling
Enabled means established schedule changes will control this reader. **Disabled** means established schedule changes will not affect this reader.

Number of Badges
Single means the reader requires only one valid badge read to open the door. **Double** means the reader requires two separate valid badge reads to open the door.

Toggle
A reader used in special applications only, in which a badge swipe toggles the reader's valid input group (non-boolean) **On** (yes) or **Off** (no), such as to arm / disarm a burglar alarm system. Toggle readers are not intended for door control, but can be used that way with some limitations. To do this, the door must be configured without a sensor, and the doorstrike output must be configured to reset with an input rather than on duration. With this configuration, the reader can toggle the door between locked and unlocked, but since there is no sensor, there can be no detection of the door being forced open or held open too long.

For an example of toggle-reader use, see “The Input Groups Form” on page 9.4 of Chapter 9 - Input and Output Groups.

NOTE

If **Toggle** is set to **Yes** and **Authorization Required** is set to **Yes**, photos are displayed for invalid transactions, but not valid transactions. See “Swipe and Show Control” on page 13.26.

Limited Usage

Selecting **Enabled** defines the reader as a limited usage reader, which will only grant access to a badgeholder for the number of times specified in the **Usage Count** field of the **Badges** form. There is no limit to the number of readers that can be defined as limited usage readers. See Chapter 14 - Badges for related information. The count must be manually reset.

Elevator Reader

Selecting **Yes** defines the reader as an elevator reader. A maximum of 16 readers on a micro can be configured as elevator readers. See Chapter 22 - Elevator Control for related information.

Doors

Use the **Doors** form to define how each door operates. Depending on the features that it should have, you may want to associate the door with an area and with inputs, input groups, and outputs--so that the system can process door status information and operate optional door hardware or alarm devices.

The **Doors** form links all access and control features of the physical door. The **Doors** form fields required for activation of particular features are listed with those features below.

NOTE To ensure proper operation when the micro runs offline, the door sensor, reader, door strike, and exit button must be wired to the same micro.

Setup

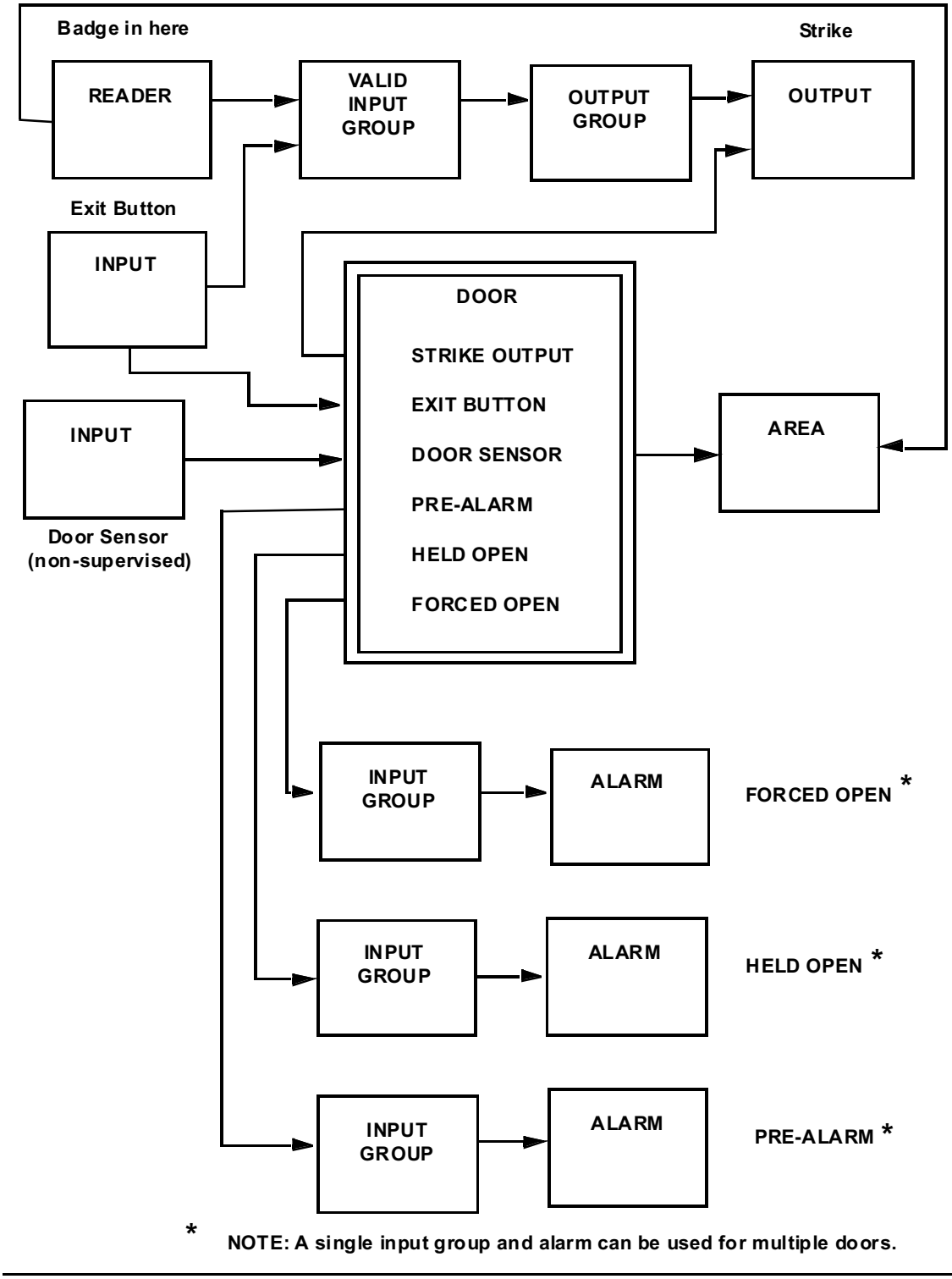


Figure 13-11. Common Door Setup

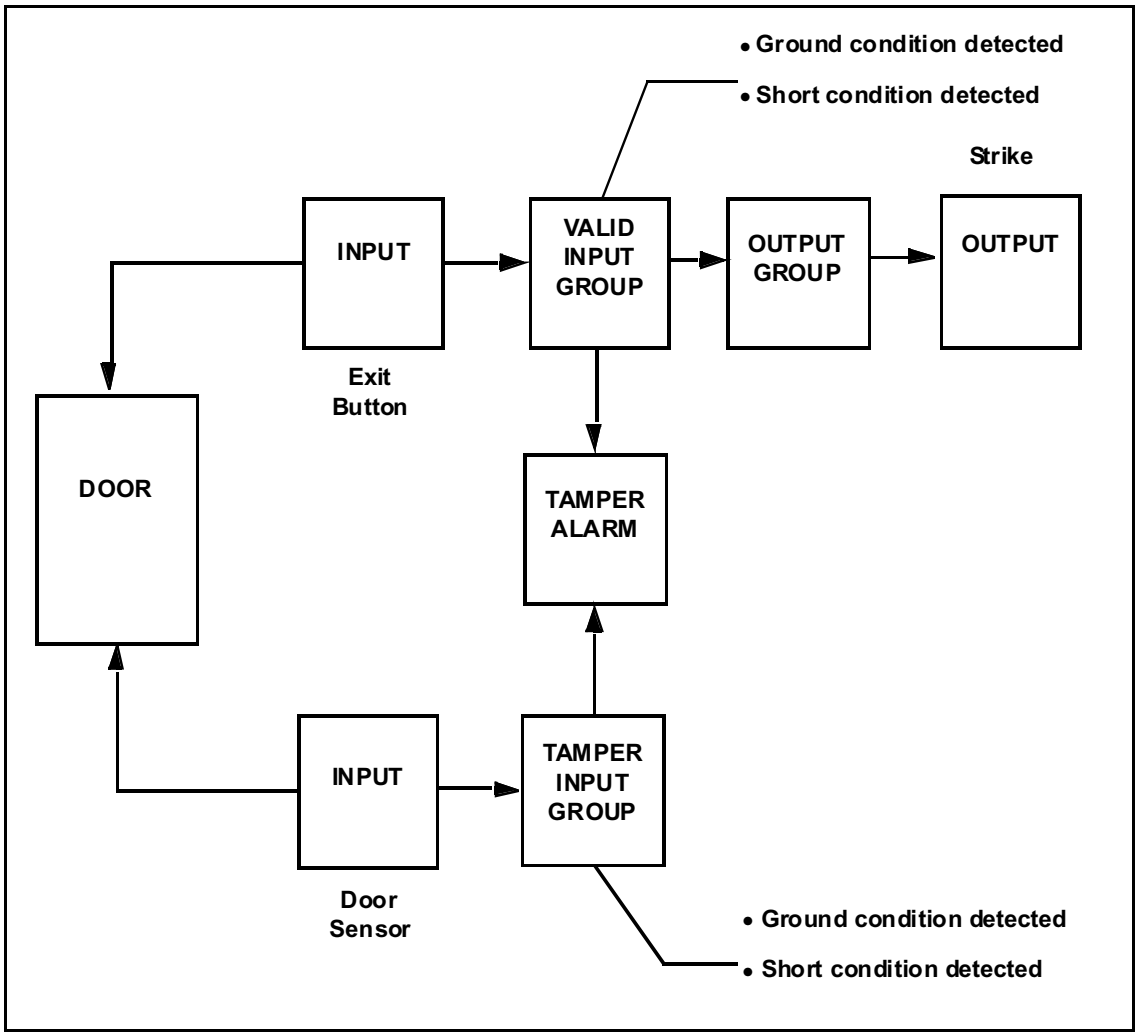


Figure 13-12. Supervised Door DI and Exit DI Setup

➤ **To define a door record:**

1. Select **Devices**, then **Doors**.
2. Click **New**.
3. Complete the **Doors** form. For details on each field, see "The Doors Form" on page 13.35.
4. Click **Save**.
5. Click **New** to add another door.

Adding or Changing a Door Sensor

A door contact functions as a sensor for two door-open conditions: "door open too long" and / or "door forced open."

If you are using the alarm shunting function on a door, when a valid badge unlocks the door strike and the badgeholder opens the door, the system begins to count the number of seconds of **Allowable Open Time**. If the door is still open when this time elapses, an associated alarm can occur. (For details on how to associate an alarm with Allowable Open Time, see Chapter 9 - Input and Output Groups and Chapter 8 - Alarm Activity Messages and Alarms.)

If you are using the monitoring function on a door, when a door is forced open, an associated alarm can occur immediately.

NOTE

You must define this sensor input (on the **Inputs** form) before you can select the appropriate door sensor input (on the **Doors** form).

➤ **To define a door sensor:**

1. Select **Devices**, then **Doors**.

2. Complete the following fields of the **Doors** form. (For details on each field, see "The Doors Form" on page 13.35.)

   - Description
   - Forced Open Shunt Time
   - Allowable Open Time
   - Keypad Shunt Time (optional—so the badgeholder can use a code to override the Allowable Open Time).
   - Held-Open Sensing
   - Forced-Open Monitoring
   - Input Groups (Forced Open / Held Open / Pre-Alarm)
   - Inputs, Door Sensor (associated with a DI point wired to the door sensor)

Adding or Changing a Door Strike Setting

A door strike associated with a reader (and / or an exit device) releases to unlock a door when a valid badge read occurs (or when an exit device is pushed).

When the door strike releases, the system starts counting the **Unlock Time** set for the door strike and then closes the door strike when the time elapses. The badgeholder opens the door during the **Unlock Time**.

➤ **To define a door strike setting:**

1. Select **Devices**, then **Doors**.

2. Complete the following fields of the **Doors** form. (For details on each field, see "The Doors Form" on page 13.35.)

   - Description
   - Unlock Time
   - Strike Output - DO (digital output) point wired to the door strike

Adding or Changing an Exit Device

An exit device releases the door strike on a door. Exit devices are often used on lobby doors. The exit button is associated with a door strike so that the latch unlocks (and the sensor is shunted) when the exit button is pushed. You can enable the exit button and define how long the latch remains unlocked using the **Doors** form.

➤ **To define an exit device:**

1. Select **Devices**, then **Doors**.

2. Complete the following fields of the **Doors** form. (For details on each field, see "The Doors Form" on page 13.35.)

   - Description
   - Unlock Time
   - Exit Button Asserts Strike - Enabled
   - Strike Output - DO (digital output) point wired to the door strike
   - Inputs, Exit Button

The Doors Form

The following is a list of fields that may require additional information for you to complete. The list is in the order that the fields appear on the form. There is no required sequence to follow.

Refer to Figure 13-13 for the top portion of the **Doors** form.

NOTE Depending on the features required for each door, all fields may or may not be applicable.

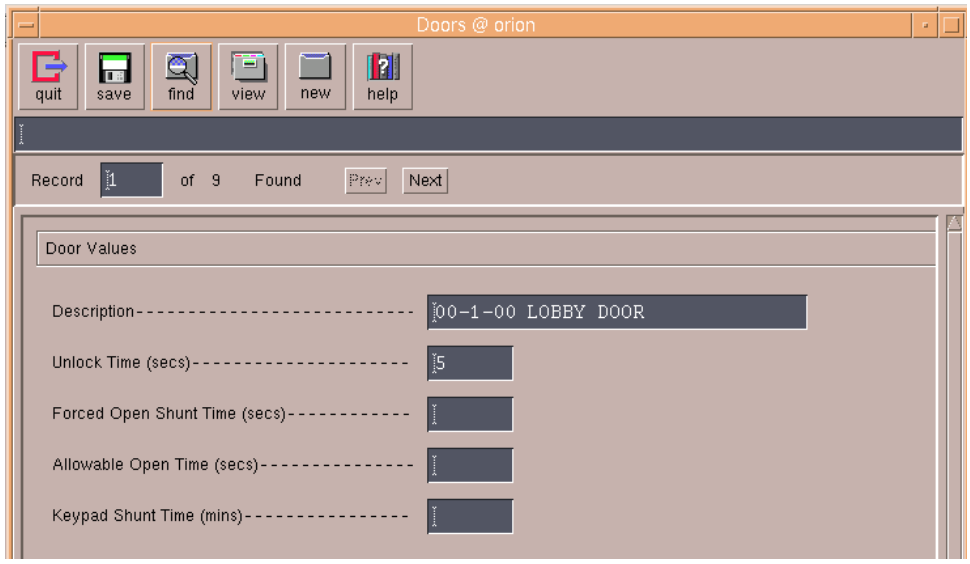


Figure 13-13. Doors Form, Top

Door Values

Define the door and the times allowed before alarms are enabled.

Description
Type a door description up to 30 alphanumeric characters long.

Unlock Time (secs)
Enter the number of seconds that this door may remain unlocked due to a valid badge read or an exit button being pushed. This field controls how long the door strike is unlocked for the badgeholder to open the door. After that, the **Allowable Open Time** controls how long the badgeholder may keep the door open while the badgeholder is passing through.

Forced Open Shunt Time (secs)
Enter the number of seconds that the **Door Forced Open** alarm will be shunted before an alarm is generated. When the shunt time expires, the **Door Forced Open** alarm is enabled.

The number of seconds set here must be greater than the **Unlock Time**. This field controls how long a door strike will remain unlocked after the **Unlock Time** expires so a badgeholder can open the door and not get a **Door Forced Open** alarm.

Allowable Open Time (secs)
Enter the number of seconds that this door may be open (due to a valid badge read) before an alarm condition exists. Be sure to set the **Held Open Sensing** button to **Detected** (in the **Door Control** box) to activate this feature.

Keypad Shunt Time (mins)
Enter the number of minutes that this door may remain open due to a badgeholder entering an override code into a keypad reader. For example, Shipping and Receiving may use the override time to keep a shipping door open beyond the **Allowable Open Time**.

Refer to Figure 13-14 for the bottom left-hand portion of the **Doors** form.

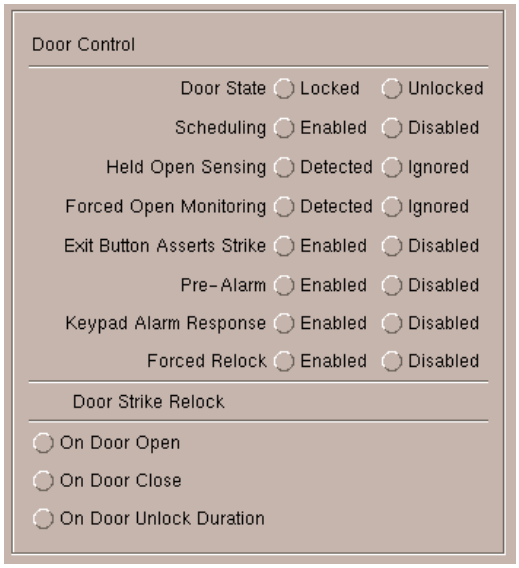


Figure 13-14. Doors Form, Bottom Left

Door Control

Use the radio buttons to specify the **Door Control** setting for each of the following items:

Door State
Indicate whether you want the door currently **Locked** (pending a valid badge read or other event) or **Unlocked**.

Scheduling
Select **Enabled** to allow scheduled changes set for this door to take place. Select **Disabled** to prevent scheduled changes set for this door from taking place.

Held Open Sensing
Select **Detected** to allow an alarm condition to occur on this door when the door remains open (with a valid badge reader or exit button) for too long, based on the **Allowable Open Time** (set in the **Door Values** box). Select **Ignored** if the sensing function on this door is not used.

Forced Open Monitoring
Select **Detected** to allow an alarm condition on this door to occur immediately when the door is forced open without a valid badge read or exit device. Select **Ignored** if the **Monitoring** function on this door is not used.

Exit Button Asserts Strike
Select **Enabled** to allow an exit button to unlock this door for the number of seconds in the **Unlock Time** field and remain open for the number of seconds in the **Allowable Open Time** field (both set in the **Door Values** box). Be sure to make a selection in the **Exit Button** field in the **Inputs** box. Select **Disabled** if an exit button is not allowed to unlock this door but will shunt the door DI.

Pre-Alarm
Select **Enabled** to allow the **Pre-alarm Notification** feature to activate. See Chapter 24 - Pre-Alarm Notification for details on this feature. Select **Disabled** if the **Pre-alarm Notification** feature is not used.

NOTE

Input groups for the above can be generic, that is, one input group and alarm can be used by all doors for forced, held and pre-alarm.

Keypad Alarm Response
Select **Enabled** to allow the **Keypad Alarm Response** feature to activate. See Chapter 23 - Keypad Alarm Response for details on this feature. Select **Disabled** if the **Keypad Alarm Response** feature is not used.

Forced Relock
If enabled, this feature provides further security by locking a door if a second person presents a badge to the reader before the first person opens the door. For example, if a person badges into a reader but does not open the door, and a second person badges into the same reader before the first person's **Unlock Time** expires, the door will immediately lock. This will show on the **Activity Monitor** as two 2ND BDG DOOR LOCK transactions (one for each person).

Door Strike Relock

Door Strike Relock provides additional security by incorporating the ability to relock the door upon a door opening or closing, or after a specified period of time.

On Door Open
When the door is opened, the door strike will relock. Do not use this option if you are using magnetic locks with built-in door open sensors.

On Door Closed
When the door is closed (after being open), the door strike will immediately relock.

On Door Unlock Duration
The door strike will relock after the **Unlock Time** (set in the **Door Values** box) has expired.

Input Groups

Select one input group for each door-error condition. This input group will activate and the associated alarm will be triggered when the associated door-error condition occurs.

NOTE

Only Trigger on Input (non-boolean) input groups are displayed in the picklists. See "Boolean Type" on page 9.5 of Chapter 9 - Input and Output Groups.

Input groups for the following can be generic, that is, one input group and alarm can be used by all doors for forced held and pre-alarm.

Forced Open
Click the **Forced Open** button to display the **Ingroups** picklist. Select the desired input group, then click **Close**. (Be sure the **Forced Open Monitoring** field of the **Door Control** box is set to **Detected**.)

Held Open

Click the **Held Open** button to display the **Ingroups** picklist. Select the desired input group, then click **Close**. (Be sure the **Held Open Sensing** field of the **Door Control** box is set to **Detected**.)

Pre-Alarm

Click the **Pre-Alarm** button to display the **Ingroups** picklist. Select the desired input group, then click **Close**. (Be sure the **Pre-Alarm** field of the **Door Control** box is set to **Enabled**.)

Refer to Figure 13-15 for the bottom right-hand portion of the **Doors** form.

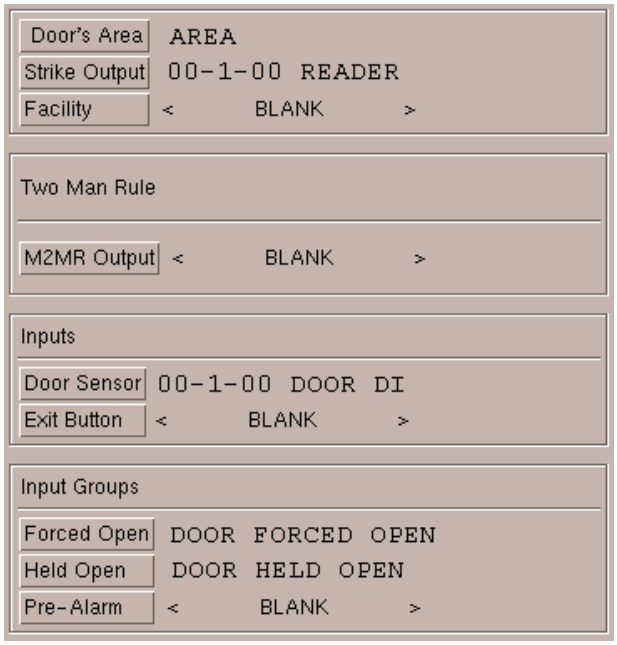


Figure 13-15. Doors Form, Bottom Right

Door's Area

Click the **Door's Area** button to display the **Areas** picklist. Select the desired area for this door, then click **Close**. If a reader is associated with this door, select the same area that is assigned to the reader.

Strike Output

Click the **Strike Output** button to display the **Outputs** picklist. Select the desired door strike output associated with this door, then click **Close**. The door output is a digital output (DO) point associated with

the door strike.

NOTE

Select a door strike output that is wired to the same micro as the associated door sensor input. The system displays a popup message to the operator if an output point is selected on the wrong micro.

Facility

Click the **Facility** button to display the facilities picklist. By default, the door record will be assigned the same facility as the micro to which the door is assigned however, you do have the ability to manually re-assign a door's facility. This might be desirable in a case where one micro controls more than one facility, for instance two companies occupying the same building that use separate doors for entry / exit. For more information, see Chapter 5 - Facilities and Facility Profiles.

M2MR Output

Click the **M2MR Output** button to display a list box from which you may optionally select an output to associate with a warning device such as a horn or strobe light. The device is used by **Modified Two-man Rule with Door Control** to notify the team members in an area that a person desiring access has presented a badge at the reader. The M2MR output is a digital output (DO) point configured to control the warning device. The value in the drop-down list may only be changed by an operator with **Occupancy Control** permission granted. When the warning device is triggered, team members in the area should press the button connected to the **Exit** button input before the door timeout has elapsed (at which point the warning will terminate) to cause the door to unlock and allow entry to the area. The M2MR output must be physically located on the same micro as the strike output.

Inputs

Door Sensor

Click the **Door Sensor** button to display the **Inputs** picklist. Select the desired input for this door sensor, then click **Close**. A door sensor is associated with a digital input (DI) point connected to a door sensor.

NOTE

Select a door sensor input that is wired to the same micro as the associated door strike output. The system displays a popup message to the operator if an input point is selected on the wrong micro. Do not attach an input group to the input unless the input is a supervised input.

Exit Button

Click the **Exit** button to display the **Inputs** picklist. Select the desired input for this exit button, then click **Close**. Be sure the **Exit Button Asserts Strike** field (in the **Door Control** box) is set to **Enabled**.

NOTE

Select an exit button input that is wired to the same micro as the associated door strike output. The system displays a popup message to the operator if an input point is selected on the wrong micro. Make sure the exit input is tied to the reader's valid input group.

NOTES

Badges

Chapter 14

Overview

Categories assigned to the badge allow the badgeholder access to areas that have the same categories assigned.

When the badgeholder attempts to access an area and at least one category on the badge matches at least one category of that area, the system grants access; if the badgeholder attempts to access an area and no categories on the badge match any categories of that area, the system denies access.

Information on the **Badges** form identifies the badgeholder by name, employee number, address, and badge ID, and also controls the function and capabilities of the badge.

Prerequisites

The following Picture Perfect forms are prerequisites:

Forms	Purpose
PERMISSION GROUPS PERMISSIONS OPERATORS	To authorize operators to issue badges and assign certain categories to badges.
DEPARTMENTS CATEGORIES PERSONNEL TYPE	To allow departments, categories, and personnel to be available for selection from picklists on the BADGES form.

What You Will Be Doing

This chapter shows you how to:

- ❒ Issue permanent badges.
  See “Issuing a Permanent Badge – Four Methods” on page 14.2.
- ❒ Issue temporary badges.
  See “Issuing a Temporary Badge” on page 14.4.
- ❒ Change badges.
  See “Changing a Badge” on page 14.5.
- ❒ Change a badge status to deleted.
  See “Changing a Badge Status to Deleted” on page 14.6.

❒ Remove badges.
See “Removing Badge Records” on page 14.7 and “Badge Removal Command Line Tool” on page 14.9.

❒ Complete the **Badges** form.
See “The Badges Form” on page 14.10.

Issuing a Permanent Badge – Four Methods

There are four ways to issue a badge using the **Badges** form: (1) Using a console reader, (2) using the keyboard (manual), (3) using the **Auto-Generate** function, or (4) using the **Seed Counter** function. Depending on the **Badge Encode** permissions selected on the **Permissions** form, an operator may or may not have access to the **Reader Issue** button and / or a display of the badge ID number (see “Permissions” on page 6.4).

Console-Reader Method

➤ **To issue a badge using the Console-Reader method:**

1. Select **Access**, then **Badges**.
2. Click **New**.
3. Click the **Reader** Issue button.
4. Swipe the badge in the console reader assigned to the terminal. The badge ID number will appear in the **Badge Encode Number** box.
5. Complete the **Badges** form. For details on completing each field, see “The Badges Form” on page 14.10.
6. Click **Save**.

Manual Method

You can approach the manual badge issue method in three different ways: (1) using a badge that is already encoded (and you type the encode number), (2) assigning an encode number to an unencoded badge (and then encoding the badge with the assigned encode number), and (3) using wedge readers.

➤ **To issue a badge using the manual method:**

1. Select **Access**, then **Badges**.

2. Click **New**.

3. Type the badge encode number into the **Badge Encode Number** box.

4. Complete the **Badges** form. For details on completing each field, see "The Badges Form" on page 14.10.

5. Click **Save**.

Auto-Generate Method

(Site-encodable badges only.)

The system uses unique information in a designated user field on the **Badges** form to generate a **Badge Encode Number** using a hidden algorithm. The designation of which user field controls this is made in the **Position for Auto-Generate** field on the **Parameters** form.

Prerequisite: "Display Flags" on page 4.30 (**Parameters** form) must be set to display the **Auto Generate** button (on the **Badges** form).

➤ **To issue a badge using the Auto-Generate method:**

1. Select **Access**, then **Badges**.

2. Click **New**.

3. Click the **User Fields** button to display the user fields. The number of user fields displayed is determined during installation.

4. Type a unique value in the user field represented by the number set in "Position for Auto-Generate" on page 4.32 (usually User Field 1). The default value for this field is 27.

5. Click the **Auto Generate** button. The badge number will appear in the **Badge Encode Number** box.

6. Complete the **Badges** form. For details on completing each field, see "The Badges Form" on page 14.10.

7. Click **Save**.

Seed Counter Method

This method will usually only be used if you are using Access Vision and Access Vision Imaging to issue your badges. The seed counter option provides a way to:

1. Automatically generate a unique Id number for each badge
2. Automatically generate the badge Id (BID) number for each badge (optional)
3. If using Access Vision, keep count of the number of times a person's badge has been re-issued.
4. If using Access Vision Imaging, keep count of the number of times a person's badge has been printed.

In order to use this feature, the seed counter must be selected at the time of **base** installation. The base installation will ask you a series of questions to help you set up the seed counter options. The setup can only be done at installation. Refer to Appendix G in the *Picture Perfect 2.0 Installation Guide* for more information.

If enabled, three new fields will appear on the **Badges** form: **Reissue Count**, **Reprint Count**, and **Unique Id**. Refer to the section, "The Badges Form" on page 14.10 for a complete explanation of these fields.

Issuing a Temporary Badge

You may replace a permanent badge with a temporary badge,when an employee forgets or misplaces their permanent badge. The permanent badge will be suspended, the categories and employee details will be copied to the temporary badge and the temporary badge will be activated. A pool of badges can be used for temporary reissues.

➤ **To create a pool of temporary badges:**

1. Select **Access**, then **Badges**.
2. Complete the **Badges** form. Under **Control**, **Temporary Badge**, click the **Yes** radio button.
3. Press **Save**.

➤ **To issue a temporary badge:**

1. Select **Access**, then **Badges**.

2. Click **Find** to search for the permanent badge record for which you are issuing a temporary replacement badge.

3. Click the **Temp** button on the toolbar.

   Result: The **Issue Temporary Badge** window will display.

4. In the **Temporary BID** field, enter the BID of the temporary badge. This number may be entered manually or by swiping a badge through a Wedge reader.

5. In the **Number of Hours** field, enter the number of hours that the temporary badge will be valid.

6. Click **Issue**.

Changing a Badge

➤ **To change a badge:**

1. Select **Access**, then **Badges**.

2. Find the desired badge record in one of two ways:
   - When the **Badges** form appears, click **Reader Issue**. Swipe the badge in a console reader, then click **Find** to display the existing badgeholder data; or:
   - When the **Badges** form appears, enter search criteria in one or more fields and click **Find**. Click **Prev** or **Next** until the correct badge profile appears.

NOTE

A search (FIND) using "indexed" fields improves the time required to find the records. Some examples of indexed fields on the **Badges** form include: Last Name, Employee ID, and Badge Encode Number

3. Complete the **Badges** form for the fields that require updating. For details on completing each field, see "The Badges Form" on page 14.10.

4. Click **Save**.

Changing a Badge Status to Deleted

When you delete a badge, the badge record remains in the database (since it might still be referenced in badge history), but it no longer grants access. This section shows you how to give the badge deleted status, not how to remove the badge record from the database. To remove the badge record from the database, see "Removing Badge Records" below. The badge must be changed to deleted status using this procedure before the badge record can be removed from the database.

➤ **To change a badge status to deleted:**

1. Select **Access**, then **Badges**.

2. When the **Badges** form appears, enter search criteria in one or more fields to locate the badge you want to delete.

3. Click **Find**. If more than one badge is found, click **Prev** or **Next** until the correct badge profile appears.

4. Click **Deleted** in the **Badge Status** box. Although the badge no longer grants access, the badge record remains in the database.

5. Click **Save**.

Removing Badge Records

CAUTION This procedure removes badge records from the database. Since it is possible to remove badge records that should be retained, you should back up your database before running this procedure.

The **Remove** function button will be on the top of the **Badges** form if the correct **Remove** permissions have been set on the **Permissions** form for the present operator. (See Figure 6-3 on page 6.5.) The **Remove** function button is used to permanently remove badge records from the Picture Perfect database. This process also removes the badge records from all micros that have learned the badges and have the badge records in their database.

Before any badge can be removed, it must have a badge status of **Deleted**. To assign the **Deleted** status, see "Changing a Badge Status to Deleted" above.

All badge removal activity is recorded in the operator history table.

➤ **To remove a badge:**

1. Select **Access**, then **Badges**.

2. When the **Badges** form appears, enter a search criteria in one or more fields to locate the badge or badges you want to remove. A single badge or group of badges can be removed. For example, you can search for all badges in a department by identifying that department in your search criteria. Select **Deleted** in the **Badge Status** box as part of the criteria when using the **Find** button to select a range of records.

3. Click **Find**. Click **Prev** or **Next** until the correct badge profile appears. The number of badges found is displayed on the top of the **Badges** form.

4. Click the **Remove** function button. The **Badge Removal** popup asks if you want to remove only the current record or all records. If you select **Remove Current Record**, only the record displayed in the **Badge Holder Information** box will be removed. If you select **Remove All Records**, the number of records shown in parentheses on the **Badge Removal** popup will be removed, provided they all have a status of **Deleted**.

Figure 14-1. Badge Removal Popup

5. Select one choice on the **Badge Removal** popup and click **Ok** to confirm your intention to remove the badge records. If you do not want to proceed with the removal process, click **Cancel**. If the Image package has been installed, there will be an additional toggle selection **Remove Associated Images** in the **Badge Removal** popup. Select this in addition to **Remove Current Record** or **Remove All Records** to remove associated photo images for the badges to be removed.

6. If you chose to **Remove Current Record**, the selected record is removed immediately.

CAUTION The next step will remove all badge records selected on the **Badges** form.

7. If you chose to **Remove All Records**, the **Remove Record** popup provides another level of confirmation. This popup also shows the range of badge records to be removed. Click **Ok** again if you are sure you want to proceed; otherwise, click **Cancel**.

Figure 14-2. Remove Record Popup

8. The **Remove Record** pop-up appears, providing an opportunity to stop the removal process before it has been completed. This pop-up

shows the progress of the removal process. The message bar on the **Badges** form shows the range of records currently being removed. During the **Remove** process, no other **Badges** form operations will be allowed. The **Badges** form will be cleared when the **Remove** process is completed or has been aborted. If the process is aborted before completion, the badge records that were removed before the abort are lost.

NOTE

If you are removing a large number of badges, the system removes badges in increments according to the **Record Remove Maximum** and **Record Remove Interval** set on the **Parameters** form. See "The Parameters Form" on page 4.27.

Badge Removal Command Line Tool

A command line tool, **`rmbadge`**, is available in Picture Perfect to allow the removal of badges from the micro and Picture Perfect database tables. The **`rmbadge`** tool allows you to remove a single badge or all badges. Previously, badges could only be removed one at a time. Badges are required to have a status of **Deleted** before they can be removed. Any badge that is removed is recorded to operator history. Operators must have the correct permissions to remove badges.

Requirements

The following requirements must be satisfied before any badges can be removed.

- TPS must be running.
- The Picture Perfect database must be up.
- Badges to be removed must have status of **Deleted**.
- The operator must have permission to remove badges. (This is set on the **Permissions** form.)

Options

The **`rmbadge`** tool takes three command line options, **`-a`**, **`-i`** and **`-p`**, as described below.

CAUTION

The badge removal command line tool, **`rmbadge`**, does not use the **Record Remove Maximum** and **Record Remove Interval** set on the **Parameters** form.

NOTE

Removing a large number of badges using this tool should be done during hours of low activity, since it has the potential to queue up a large number of requests to the micros.

Removing All Badges

To remove all badges, use the **`-a`** option. For example:

```
rmbadge -a
```

When removing more than 50 badges, you will see an update message on the screen to indicate the progress every 50 badges that are removed.

Removing Single Badges

To remove a single badge, use the **`-i`** option followed by the badge encode number for that badge. The format of the badge encode number must match that used on the **Badges** form. This means leading zeroes are significant. For example:

```
rmbadge -i 0000012345
```

Removing Associated Photo Images

If the Image package has been installed, you may wish to remove the photo images in addition to removing the badges. Use the **`-p`** option in addition to the **`-i`** or **`-a`** option to remove associated photo images. For example:

```
rmbadge -p -i 0000012345
```

The Badges Form

The following is a list of fields that might require additional information for you to complete. Several of the fields are required:

- First Name
- Last Name
- Initials
- Employee ID
- Badge Status
- Badge Encode Number
- Personnel Type.

The list is in the order that the fields appear on the form. There is no required sequence for you to follow.

NOTE

A search (FIND) using “indexed” fields improves the time required to find the records. Some examples of indexed fields on the **Badges** form include: Last Name, Employee ID, and Badge Encode Number

Refer to Figure 14-3 for the top left-hand portion of the **Badges** form.

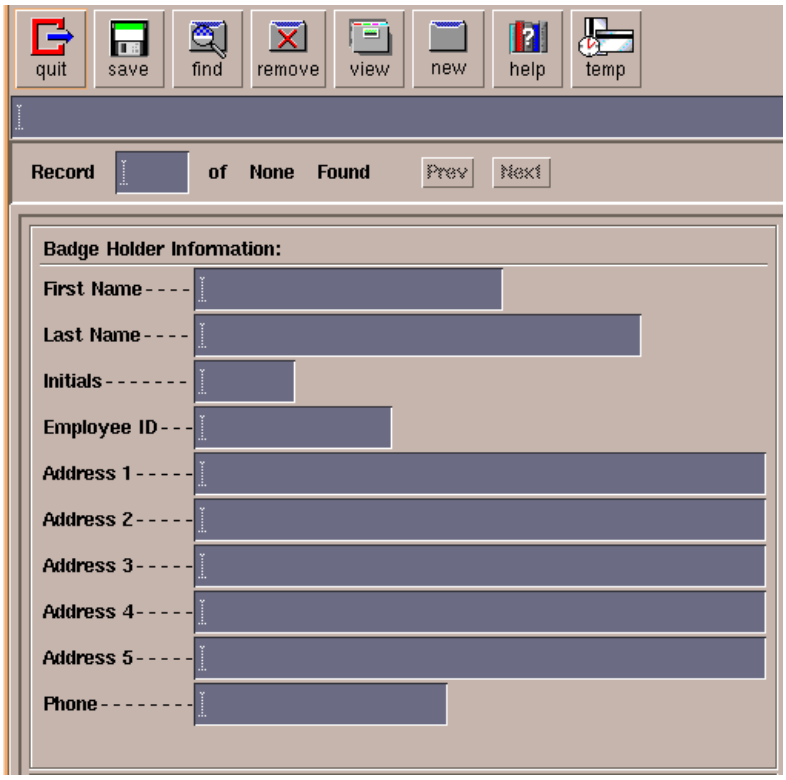


Figure 14-3. Badges Form - Top Left

Badge Holder Information

First Name
Type the badgeholder’s first name (up to 20 characters).

Last Name
Type the badgeholder’s last name (up to 30 characters).

Initials
Type the badgeholder’s initials (up to 5 characters).

NOTE

The initials (not the first name) display on the **Activity Monitor** in front of the last name of the badgeholder. Therefore, use initials to distinguish between badgeholders who have the same last name.

Employee ID
Type an alphanumeric employee ID 1 to 12 characters long; for example, social security number.

Address 1 through Address 5
Type the badgeholder's address (up to 40 alphanumeric characters per field). The **Address 1** through **Address 5** field names can be changed using the **User Customization** tool. See Chapter 31 - User Customization.

Phone
Type the badgeholder's phone number (up to 16 characters). You may type dashes or spaces between digits in the **Phone** field.

Refer to Figure 14-4 for the top middle portion of the **Badges** form.

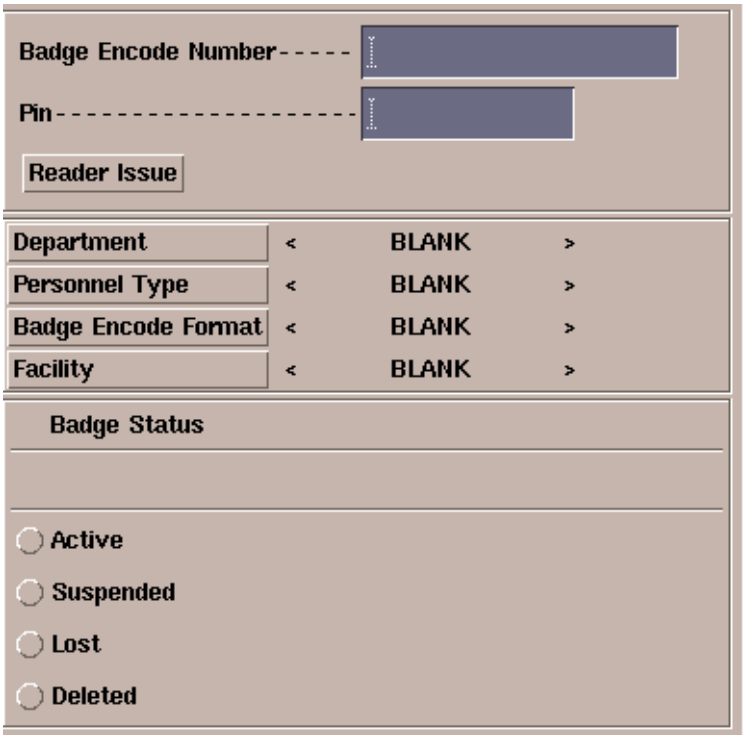


Figure 14-4. Badges Form (Top Right)

Badge Encode Number

This field contains the unique encoded number of the badge. See "Issuing a Permanent Badge – Four Methods" on page 14.2 for details on this procedure.
This field is **View Only** when the **Seed Counter** feature and the **Copy to BID** option are enabled as shown in Figure 14-5.

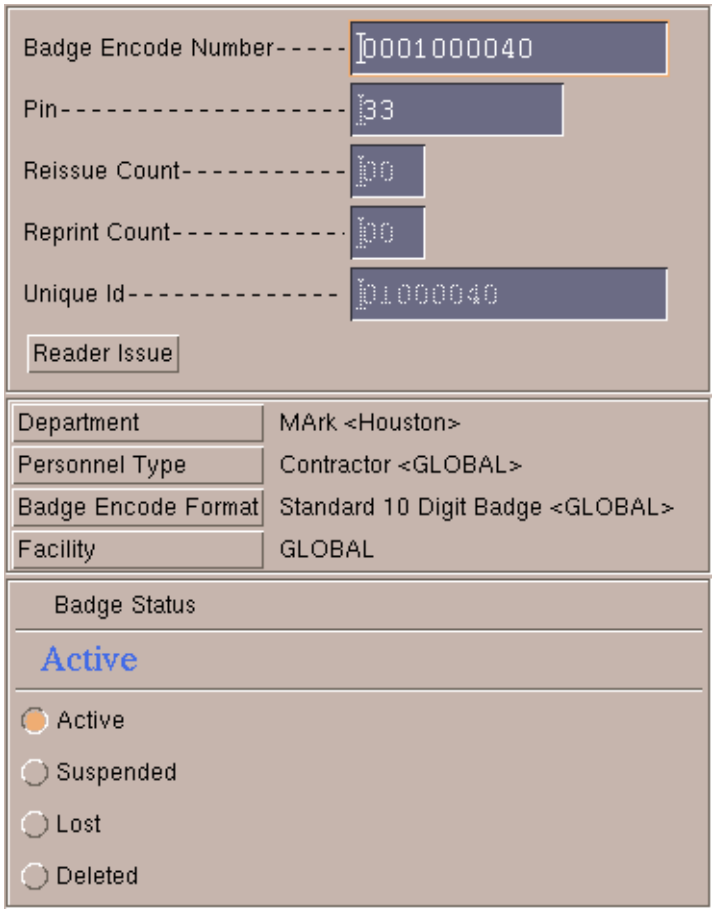


Figure 14-5. Badges Form (Top Middle - with Seed Counter enabled)

Pin

Type a personal identification number 1 to 10 digits long for the badgeholder to use with a badge-and-keypad reader.

Reissue Count

This view-only field is visible if the seed counter option is enabled during installation. This is the number of times the badge has been reissued using Access Vision. A new badge will set the **Reissue Count** to 00. Subsequent reissues of the badge will increment the number, storing it to the badge. Reissued records re-use the same **Unique Id** number to tell that the badge belongs to the same person. The maximum number of times a badge may be reissued is 99. If the maximum is exceeded, a new **Unique Id** is created for the badge and the **Reissue Count** is reset to 00.

Reprint Count

This view-only field is visible if the seed counter option is enabled during installation. This is the number of times the badge has been printed, using the Access Vision Imaging package. A new badge will set the **Reprint Count** to 00. Anytime the badge is printed or previewed, the badge will increment the number, storing it to the badge. The maximum number of times a badge may be reprinted is 99. If the maximum is exceeded, a new **Unique Id** is created for the badge and the **Reprint Count** is reset to 00.

Unique Id

This view-only field is visible if the seed counter option is enabled during installation. The seed counter assigns a unique number to each badge. This unique number consists of two parts: the **Workstation Id** and the **Sequential Counter**.

Workstation Id

The **Workstation Id** is a number containing one to four digits. It is used to uniquely identify the workstation that created the badge, and to generate the **Unique Id** number. The Picture Perfect host or web browsers will use a **Workstation Id** of 0. All Access Vision client workstations that create badges offline, have a unique **Workstation Id**. The **Workstation Id** is automatically set up for you when you create the **Terminal** record for the Access Vision client workstations in Picture Perfect.

NOTE

When creating the terminal record for an Access Vision client workstation, the **Server** field in the **Terminal** form must be filled in with the exact computer name of the client workstation in order for Access Vision to retrieve the correct **Workstation Id**.

Sequential Counter

The **Sequential Counter** is a global counter that is incremented each time a new badge is created or reissued. The range is determined by the number of digits allocated to the counter.

Reader Issue

Click the **Reader Issue** button to allow the **Badge Encode Number** to be entered by swiping a badge in a local console reader assigned to the terminal used to issue the badge. A prompt advises you when to swipe the badge. The badge encode number will appear in the **Badge Encode Number** box.

This field is disabled when the **Seed Counter** feature and the **Copy to BID** option are enabled. For more information on this feature, see “Seed Counter Method” on page 14.4

NOTE

When **Reader Issue** is used, the **Badge Encode Format** field will have no effect on the badge encode number (BID) displayed. The BID displayed will always be the actual full BID read from the badge. If **Save** is clicked, then the BID entered will be checked against the badge encode format to ensure it satisfies its specifications. If the number of digits in the BID does not match the BID format selected, a mismatch will occur and the record will not be saved. If the BID matches, then the field will be updated and the record saved.

Auto Generate

Clicking the **Auto Generate** button generates a badge encode number automatically.

Prerequisites: (1) The **Display Auto Generate** radio button in the **Display Flags** field of the **Parameters** form must be set to **On**; (2) a number must be entered in the **Position For Auto-generate** box on the **Parameters** form; and (3) user information must be entered in the corresponding user field on the **Badges** form. See "Auto-Generate Method" on page 14.3.

Department

Click the **Department** button to display the **Departments** picklist. Select the desired department for this badgeholder, then click **Close**.

Personnel Type

Click the **Personnel Type** button to display the **Personnel Types** picklist. Select the desired type, then click **Close**.

Badge Encode Format

Click the **Badge Encode Format** button to display the **Badge Encode Format** window (Figure 14-6). Select the desired format, then click **Close**. This is not necessary unless the system has more than one badge encode format.

NOTE

When the **Seed Counter** feature and the **Copy to BID** option are enabled:

- The **Badge Encode Format** selection button can be used when performing a search, by selecting a format and then clicking **Find**. Once the search results are returned, the button is disabled.
- When creating a new record, no matter what format you select, when the record is saved, the Seed Counter defined format will be used and the field will be grayed out.

Figure 14-6. Badge Encode Format Window

Facility

Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

Badge Status

Select one of the four badge status descriptions. There is one type of **Valid** badge status (**Active**) and three types of **Invalid** badge statuses (**Suspended**, **Lost**, **Deleted**).

You should update the badge status as needed. For example, if a valid badge is lost, this status change should be indicated in the **Badge Status** box. Then, if the lost badge is later tried in a reader, the system will deny access and should generate a lost badge alarm.

Refer to Figure 14-7 for the top right-hand portion of the **Badges** form.

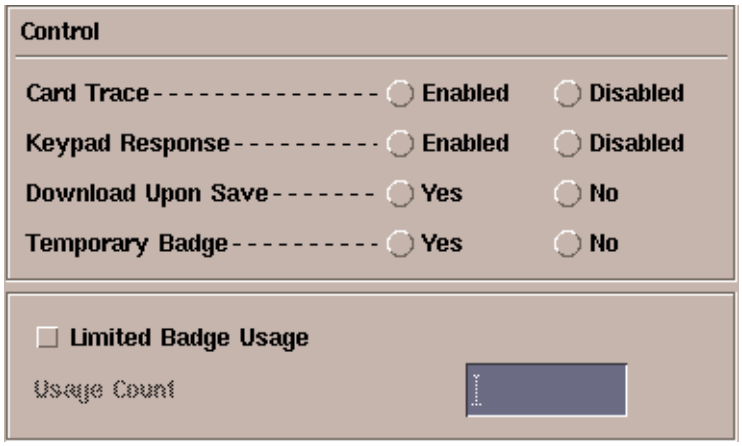


Figure 14-7. Badges Form (Bottom Right)

Control

Card Trace

Use this field only when you want to trace the activity of a particular badge. Select **Enabled** to allow the **Card Trace** feature to track this badge. The letter "T" is inserted in front of the transaction when it appears on the **Activity Monitor**. Select **Disabled** when you no longer need to trace the badge. See Chapter 25 - Badge Trace for details on this feature. Card trace routing is defined on the **Parameters** form.

Keypad Response

Select **Enabled** to give this badgeholder the ability to respond to special alarms requiring keypad input. Select **Disabled** if this feature is not required. Normally, this feature is disabled. See Chapter 23 - Keypad Alarm Response for details on this feature.

Download Upon Save

Select the **Yes** or **No** radio button. If you select **Yes**, any time a badge record is saved, it is downloaded to all micros, subject to the following conditions:

New Records: New records that are created by copying an existing record that has this field set to **Yes** will be automatically changed so that this field is set to **No**. This prevents accidental downloads to all micros when using the **Copy** feature of the **New** button. You must manually set this field to **Yes**.

Updated Records: Updated records are only downloaded to all micros if the previous setting was saved as **No**. The next time a badge record field is changed for a badge record that previously

had this field set to **Yes**, the record will only be sent to those micros that have learned this badge. To resend an updated badge record to all micros, perform the following steps:

1. Set the **Download Upon Save** field to **No**.
2. Save the record.
3. Make any other field changes if needed.
4. Set the **Download Upon Save** field to **Yes**.
5. Save the record.

If you select **No**, any time a badge record is saved, it is only sent to those micros that have learned this badge record, which is the normal method of operation. This is the default for any new record, including those that were copied from an existing record.

NOTE

When a record is changed, only the changes are sent down to the micro and not the whole record. If a situation arises where a change never gets to a micro, then do the following:

1 Undo the changes (reverse the change)

2 Save the record

3 Make the changes again

4 Save the record

Dial-up micros are handled according to the dial up settings on the **Micros** form.

Temporary Badge
Select the **Yes** radio button if this badge record is to be used as a temporary badge. A pool of badges can be created and used repeatedly for this purpose. A temporary badge must be expired in order to be reissued.

Limited Badge Usage

Select this feature to allow entry to **Limited Usage** readers. Type a specific number in the Usage Count field. Each time the badge is used in a **Limited Usage** reader, the usage count is decremented by 1. When the count is 0, the badge will no longer grant access into a **Limited Usage** reader. See Chapter 13 - Categories, Areas, Readers, and Doors for related information.

Refer to Figure 14-8 for the bottom left-hand portion of the **Badges** form.

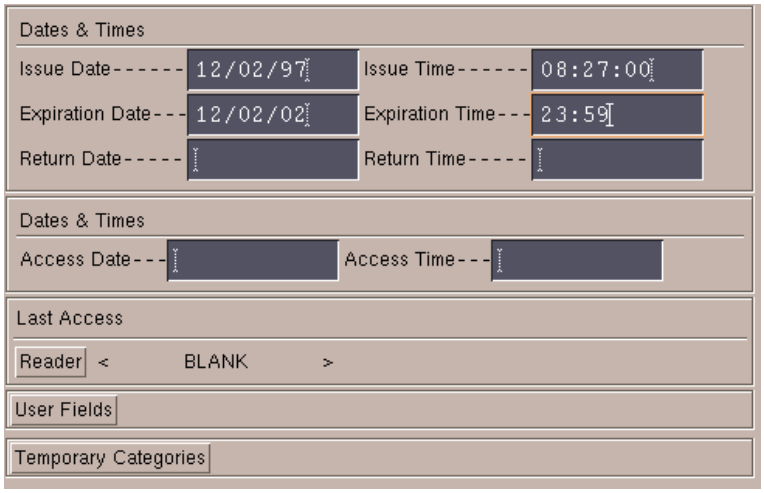


Figure 14-8. Badges Form (Bottom Left)

Dates & Times

Issue Date

Type the date the badge was issued. If this field is left blank, the system will automatically enter the current date. Type the slashes (/) if the system date format requires them.

Issue Time

Type the time the badge was issued. If this field is left blank, the system will automatically enter the current time. Type the colons (:) if the system time format requires them.

Expiration Date

Type the date when the badge should expire. The system invalidates the badge when the expiration date and time occur. Type the slashes (/) if the system date format requires them. If you enter an expiration date, an expiration time must also be entered. For no expiration date, leave blank.

Expiration Time

Type the time when the badge should expire on its expiration date. The system invalidates the badge when the expiration date and time occur. Type the colons (:) if the system time format requires them. For no expiration time, leave blank.

Return Date

If the badge is being returned, enter the date when the badge is returned. Type the slashes (/) if the system date format requires them.

Return Time
If the badge is being returned, type the time when the badge is returned. Type the colons (:) if the system time format requires them.

Access Date/Access Time
Indicates the date and time that the last access was granted to this badge. The system supplies this data. Do not over-type data in this field. For no access date / time, leave blank.

Last Access

The system tracks the badge and displays information about when it was last used. This reflects information captured as of the moment the badge record was displayed.

Reader
Indicates which reader last granted access to this badge. The system supplies this data. Do not over-type data in this field.

NOTE Unless the door is actually opened, this field is not updated.

User Fields

User 1 through User 40
Type information (up to 40 alphanumeric characters) in one or more user fields to identify the badgeholder (for example, license tag number). The number of user fields that appear on the **Badges** form is determined during installation, and is shown on the **Parameters** form. The names of the user fields can be changed using the **User Customization** tool. See Chapter 31 - User Customization.

NOTE When the **Display Auto Generate** button is enabled on the **Parameters** form, the system uses the user field designated in the **Position For Auto-generate** field on the **Parameters** form to generate a unique **Badge Encode Number**. See “Auto-Generate Method” on page 14.3.

Temporary Categories

Temporary categories are set to be enabled during certain times of day and will expire on a certain date and time. They are selected and set on an individual-badge basis.

NOTE

Micros must be properly installed before **Temporary Categories** become active. In addition, for this feature to work, communications must be present between the host and micro.

Click the **Temporary Categories** button to display the **Temporary Categories** form (Figure 14-9). The number of **Temp Cat** buttons displayed is determined during installation, and is shown on the **Parameters** form.

Click the desired **Temp Cat** button to display the **Categories** picklist. Select the desired category, then click **Close**. If a **Temp Cat** button is grayed out, this indicates that a regular category already holds that slot.

Figure 14-9. Temporary Categories Form

For each temporary category selected, enter the appropriate information in the following fields:

Start Date
Type the date on which the temporary category is to be enabled. Use the format of your system date as set on the **Parameters** form.

Stop Date
Type the date on which the temporary category is to expire. Use the format of your system date as set on the **Parameters** form.

Start Time
Type the time at which the temporary category is to be enabled each day for a **Daily** schedule type), using the interval set at installation time. For example, if you selected the 30-minute default scheduling interval, select start times that occur on the hour or half hour. Use the format of your system time as set on the **Parameters** form.

Stop Time
Type the **Stop Time** (the time at which the temporary category is to be disabled each day for a **Daily** schedule type), using the interval set at installation time. For example, if you selected the 30-minute default scheduling interval, select stop times that occur on the hour or half hour. Use the format of your system time as set on the **Parameters** form.

If a temporary category is currently enabled, its category name will appear on the **Badges** form with its **Temp Cat** button grayed out. If a temporary category is currently disabled, its category name will not be displayed, but its **Temp Cat** button will still be grayed out.

Once a temporary category reaches its expiration date, the category will be dropped from the badge record altogether and its category slot will be empty. That temporary-category record will remain in the **`temp_category`** table of the database for one week after expiration.

The enabling and disabling of temporary categories is logged under the operator ID of **`tcmgr`** in operator history.

Clicking the **Advanced** button opens a new window as follows.

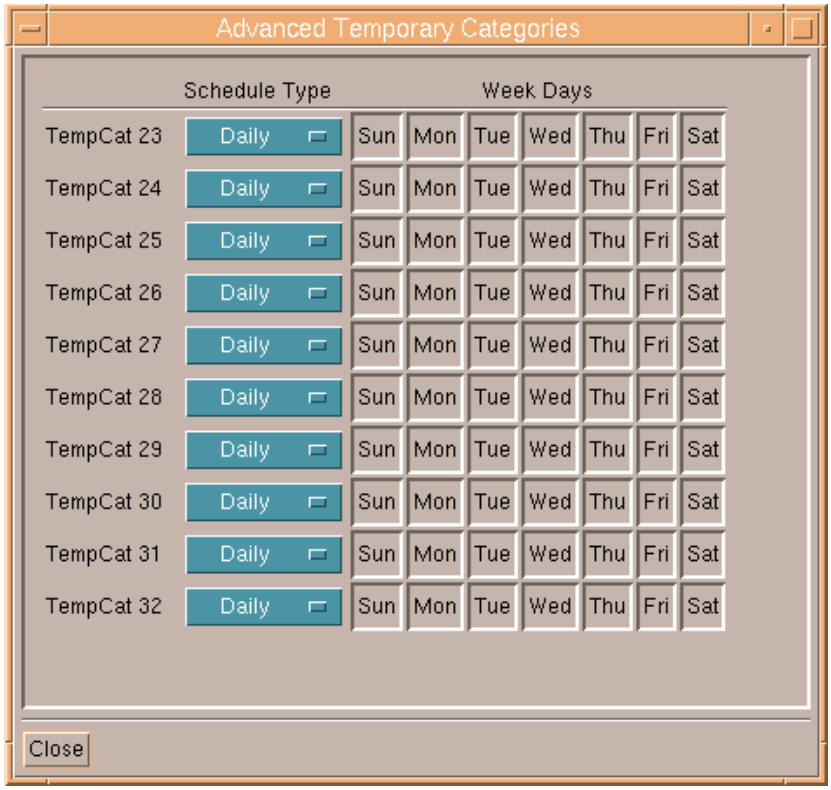


Figure 14-10. Badge Form - Advanced Scheduling

Schedule Type

From the **Advanced** window, you can choose a schedule type of **Daily** or **Continuous**. A **Daily** schedule type means that the category will be enabled each day at the **Start Time** and disabled each day at the **Stop Time**. A **Continuous** schedule type means that the category will be enabled at the **Start Time** of the **Start Date** and disabled at the **Stop Time** of the **Stop Date**. The default schedule type is **Daily**.

NOTE

Holding down the Shift key and selecting a schedule type will set all the schedule types.

Week Days

From the **Advanced** window, you can restrict the days of the week that a temporary category will be enabled. A week day that is selected means that the schedule can run on that day. A week day that is not selected prevents the schedule from running on that day. By default, all days of the week are selected.

NOTE

Holding down the Shift key, and selecting a day, sets Monday-Friday or Saturday-Sunday

Antipassback Status

When used in conjunction with antipassback readers, the Antipassback status of a badge (plus a category match) regulate its ability to open a door. For example, if a badgeholder *enters* an antipassback area without using his own badge (such as by following someone else through the open door), that person will not be able to *exit* that area with his own badge, because the system never registered him as having *entered* that area. Likewise, if a person *exits* an antipassback area without using his badge, he cannot *re-enter* that area, since the system has not registered his *exit*.

Antipassback status is global, meaning the system will register whether someone is in or out, but it does not regulate the status on a per-reader basis. For example, someone can badge *in* at an antipassback reader in one room, follow someone out of that room and into another antipassback-controlled room without using his own badge, and then be able to badge *out* of the second room. The system registered him globally as *in* (without regard to reader location); therefore, he can badge *out* of any room. If he followed someone out of the first room and then tried to badge *in* at the second room, however,

he would not be given access, because the system has him already registered as *in*.

If the badgeholder is required to use an antipassback reader, assign the badge an antipassback status of neutral; otherwise, leave these buttons unselected.

Neutral
Indicates an unknown user state (**In** / **Out**). The next time the badge is used in an antipassback reader, the system will set the appropriate **In** / **Out** state. Use this setting when creating a new badge, or when a badgeholder gets locked in or out of an antipassback area.

In or Out
Indicates whether the last use of this badge logged the badgeholder **In** or **Out** of the antipassback reader's area. This reflects information captured as of the moment the badge record was displayed, but the information will not be updated automatically while it is on the screen. It can be changed manually if necessary.

Privileged
Indicates that whenever this badge is read by an antipassback reader, the system ignores the antipassback status. Access is granted if categories match the area, regardless of whether the badgeholder was logged into or out of the area. Assign this status to a badgeholder who has to use antipassback readers, but is not to be governed by them.

Reset Timed APB Status
This button sends a message to the micro to reset the **Timed APB** status back to **Neutral**.

Refer to Figure 14-11 for the bottom middle portion of the **Badges** form.

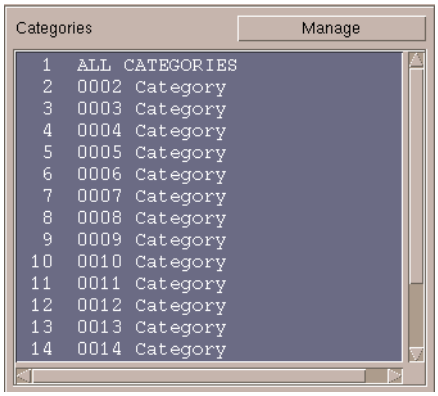


Figure 14-11. Badges Form (Bottom Middle)

Categories

If the **Increased Category** feature was selected during installation, 96 categories of users are available for assignment to a badge. Otherwise, 32 categories of users are available for assignment. This list box contains the active badge categories, ordered by slot number. To access an area, a badge must match at least one category that is assigned to that area.

Manage

Click the **Manage** button to display the **Category Manager** window, Figure 13-4, from which you may add, remove, or replace a category in a slot. You may also apply filters to the categories that are displayed in the categories list box. For more information on Category Management, see “Managing Category Assignment” on page 13.8.

NOTES

Generator

Chapter 15

Overview

The Generator can be used to add new readers, doors, and areas to your system. The Generator uses specially-chosen existing records as templates to generate new records, saving the operator time and making it easier to set up a reader and door in the system. The **Generator** form allows you to select an existing micro and add new reader records to it, with all necessary records associated with the reader automatically being created and properly linked.

What You Will Be Doing

This chapter shows you how to configure the master records that will be used when you are working with the **Generator** form to create new records. Master records (forms) will be configured for the following:

- Areas
- Inputs
- Input Groups
- Outputs
- Readers
- Doors

NOTE An **Output Group** record is also generated, but it is assigned the name that you type in the **Description** box. No other operator action is needed.

Creating Master Records

The **Master Records** function button on the **Generator** form brings up the **Master Records** window. Before you can use the **Generator** form, you must assign a master record for each of the items on the **Master Records** window. The **Master Records** window has six **Description** buttons, one for each type of master record. When you click one of the **Description** buttons, a picklist appears that allows you to select one record from the group of previously-created records.

Once master records are created, they are used to generate readers and doors for your system. Since most generated records are similar, the Generator can be used to copy the values from the master record into a newly-generated record. Copying a set of values from the master record saves you from having to configure and save each record.

The **Master Records** table is required to be set up only once, but it can be changed at any time. The changes only affect records generated after the change; no previously-generated records are affected. If records are created from a defective master record, the created records must be corrected individually; there is no "Master Records Corrections" facility.

➤ **To create Master Records:**

1. Select **Control**, then **Generator**.
2. Click the **Master Records** function button at the top of the **Generator** form. The **Master Records** window appears (Figure 15-1).
3. Click the **Description** button for each of the master records and choose the description that you want to use for a template. Click **Close** to exit the **Description** window.
4. Click **Ok** to save the master records and return to the **Generator** window.

5. Click the **Quit** function button to exit the **Generator** window.

Figure 15-1. Master Records Window

The Generator Form

Use the Generator form to create new records for output groups, input groups, outputs, areas, readers, and doors and to then insert the records into the database.

To place the new records into the database, click the **Execute Gen** function button on the top of the form.

To generate another record, click the **New** function button on the top of the form. You will be presented with the option of clearing the present form or copying the current data for a new reader. **Clear** will not clear your master records.

To exit from the **Generator** form, click the **Quit** function button on the top of the form.

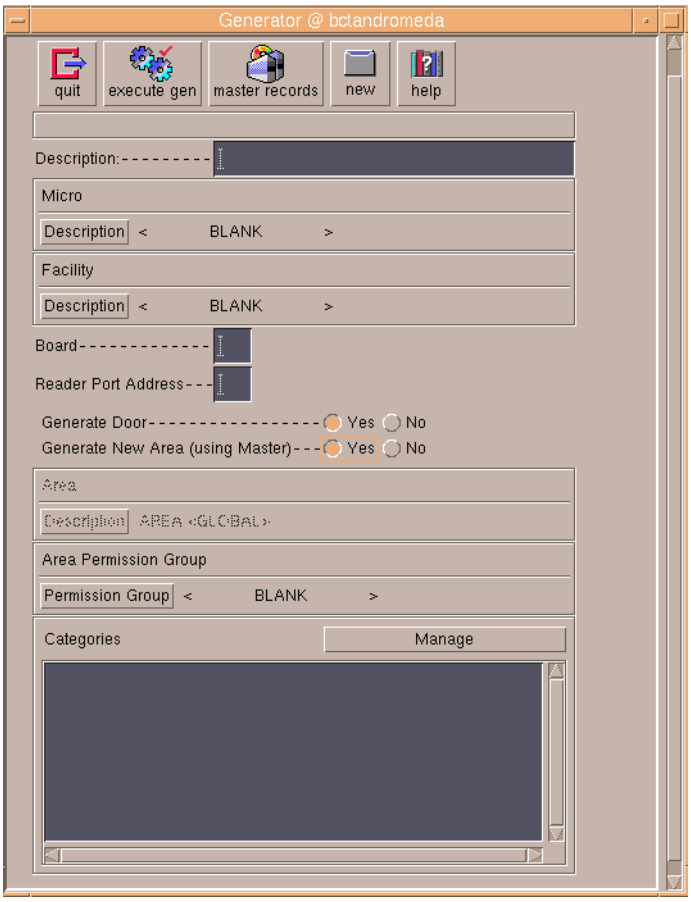


Figure 15-2. Generator Form

Description

Type a description for the record that will be generated (30 alphanumeric characters maximum). There is no required naming convention, but if you type a name that already exists in the database, an error message will inform you that this name is already in use. The description format MMM-B-AA is recommended, where: MMM = micro, B = board, and AA = address.

Micro

This is a picklist of micros defined on the **Micros** form. Click the **Description** button, select a micro from the picklist, and click **Close**. The selected micro that will be used for the generated records is shown beside the **Description** button.

Facility

This is a picklist of facilities defined on the **Facilities** form. By default, the generated records are created with the facility that is assigned to the micro for which these records are being added. You can override this behavior and have these records created with the facility of your choosing.

Click the **Description** button, select a facility from the picklist, and click **Close**. The selected facility that will be used for the generated records is shown beside the **Description** button.

For more information, see Chapter 5 - Facilities and Facility Profiles.

Board

This is the board number that the reader is connected to in the selected micro. Enter one board number from the range 1 through 8.

Reader Port Address

This is the reader port address as set on the reader board. Enter one port address number from the range 0 through 7.

Generate Door

This tells the generator whether to generate a new door for the reader. Select the **Yes** or **No** toggle button. If you select **Yes**, an input record is generated if **Held Open Sensing** or **Forced Open Monitoring** are set to **Detected** on the **Doors** form. If you select **No**, a door record is not generated.

Generate New Area (using Master)

This tells the generator whether to create a new area record using the values from the master Record. If you select **Yes**, a new area record is created from the master record entries, and you must select an **Area Permission Group** and an **Area Category** from picklists. If you select **No**, you will select an existing area record, complete with its **Area Permission Group** and **Area Category**.

Area

This is a picklist of areas defined on the **Areas** form. The selected area will be assigned to the generated records for the reader and door. If an area is chosen here, there will be no area record generated, since the operator is choosing to assign an existing area.

The **Area** picklist becomes available for selection and is required when the **Generate New Area (using Master) No** option is selected. If the

Yes option is selected, there is no need to select an existing area and this picklist will become "Grayed Out" making it unselectable.

Area Permission Group

This is a picklist of **Area/Category** type permission groups defined on the **Perm Group** form. The selected permission group will be used for the newly generated area record.

The **Perm Group** picklist becomes available for selection and is required when the **Generate New Area (using Master) Yes** option is selected. If the **No** option is selected, there is no need to select an existing permission group, and this picklist will become "Grayed Out" making it unselectable.

Area Categories

If the **Increased Category** feature was selected during installation, 32 area categories may be assigned to an area record. Otherwise, 10 area categories may be assigned to an area record.
The **Category** window becomes available for selection and is required when the **Generate New Area (using Master) Yes** option is selected. If the **No** option is selected, there is no need to select categories, since they already have been selected for the existing areas. This field will become "grayed out" making it unselectable.

Manage
Click **Manage** to display the **Category Manager** window, from which you may add, remove, or replace a category in a slot. The selected categories will be used for the newly generated area record.

For more information on category management, see "Managing Category Assignment" on page 13.8.

Generating Records

You have the option of generating area records from the master records information or from existing information entered on other forms, depending on your answer to the **Generate New Area (using Master)** question. If the answer is **Yes**, the **Generator** form is used to enter the required information, and a new area is generated and assigned to the reader.

If the answer is **No**, you must click the **Description** button in the **Area** box and choose an existing area description from the **Areas** picklist. This existing area is assigned to the reader.

➤ **To generate records:**

1. Select **Control**, then **Generator**.
2. Complete the **Generator** form (Figure 15-2) for each record.
3. Click the **Execute Gen** function button to place the records into the database.
4. Click **New** to generate another reader record.

NOTES

Schedules and Modes

Chapter 16

Overview

Schedules allow you to change a variety of operational characteristics based on mode, day of week, and time of day. Using the **Schedule** feature, you can specify when you want a particular type of change to occur. That change will remain in effect until overridden by another schedule or mode event, or manually changed by an operator.

The Picture Perfect system supports multiple modes of operation, such as Normal, Holiday, and Emergency. When you initially set up the system, make sure that all the values and schedules that you define (for readers, doors, areas, etc.) are associated with your normal operating mode. Weekdays and weekends occur within your normal operating mode, so the system does not need a unique "weekend mode." An "evening mode" is not required either, as the normal mode can contain schedules for multiple shifts and weekends.

To operate the system in a different mode during holidays (or other special events based on the calendar), you must create a mode, re-define the schedules to occur during that mode, and then schedule the mode to become active on a selected date and time.

When a mode becomes active, it remains active until changed by an operator (by Mode Command) or by another scheduled Mode Event. A Mode Event is a scheduled change to one or more of the operating characteristics. Events can occur when a mode starts, when a mode ends, or at a given time of day and day of week within the mode. Typical events are locking and unlocking lobby doors for general access, turning on motion detectors after hours, and changing categories on areas to control access for shift workers.

Administrative procedures can also be scheduled, such as performing backups and running reports. For details on these procedures, see the "Scheduling" sections of Chapter 18 - Backup and Restore, Chapter 19 - History Reports, and Chapter 20 - SQL Reports.

Prerequisites

The following Picture Perfect forms are prerequisites:

Forms	Purpose
DOORS READERS AREAS ALARMS	So individual events can be scheduled.
INPUTS INGROUPS OUTPUTS OUTGROUPS	To allow inputs and outputs to activate, and to schedule input group and output group events.

Before creating a schedule, refer to the appropriate chapter to make sure you have completed the prerequisites. For example, if you want to create a schedule for a lobby door, first complete the **Doors** form for this lobby door and complete all the prerequisites for doors.

What You Will Be Doing

This chapter shows you how to create modes, how to change your system to a different operating mode (by schedule or command), and how to schedule events within a mode.

Creating Modes

The **Normal** operating mode is already entered into the system. You can create additional modes as necessary, using the **Mode Creation** form. These modes and those that you create will appear on the **Mode** picklist for the various **Events** forms.

Modes must contain scheduled events, either **Runtime** (see "Runtime Events" on page 16.11) or **Start/End** (see "Start/End Events" on page 16.12). Only the events scheduled for a mode will occur while in that mode, so it is important to make sure all necessary events are scheduled.

Modes can be changed either by command, using **Mode Command**, or by schedule, using **Mode Event** (See "Changing Modes" on page 16.7).

Normal Mode

Your **Normal** mode usually does not require any start/end events to be scheduled. A start/end event is something you schedule to happen once--not subject to weekly or 24-hour cycles.

Use runtime events to schedule the necessary cycles. You do not need "weekend" or "evening" modes, since the runtime events in a single mode

allow you to set different operating characteristics for all days of the week and all times of the day.

Emergency Modes

Create **Emergency** modes to handle situations such as fires, accidents, or other work disruptions. Define these modes on the **Mode Creation** form using descriptions such as **Emergency** and **Fire**.

Emergency modes are usually activated by the operator using **Mode Command**, and typically use start/end events. Remember that most mode-start events require parallel mode-end events. Unless there are events that need to cycle during the emergency mode, you do not need to set up runtime events.

Table 16-1 and Table 16-2 give examples of start/end events that you might set up for emergencies such as a security alert (Restricted-Mode) or a fire (Fire-Mode).

Table 16-1: Example of Restricted-Mode Settings

Event	Form	Schedule
Start Limited Access (Removes all categories from an area and assigns one category that permits access to selected badgeholders only.)	Area Events	At Mode Start
End Limited Access	Area Events	At Mode End
Lock Exterior Doors	Door Events	At Mode Start
Keypad Lobby Reader (Activates the keypad on the lobby reader to require badgeholders to enter a PIN as well as a badge.)	Reader Events	At Mode Start
Normal Lobby Reader	Reader Events	At Mode End

Table 16-2: Example of Fire-Mode Settings

Event	Form	Schedule
Turn Siren On	Outgroup Events	Time
Unlock All Doors	Area Events	At Mode Start
Lock All Doors	Area Events	At Mode End
Turn Lights On	Outgroup Events	Time

Holiday Modes

Create **Holiday** modes to handle access-requirement changes during scheduled holidays. Define the mode on the **Mode Creation** form using a description such as **Holiday** or **Vacation**.

Holiday modes are usually activated automatically by scheduling them using **Mode Events**, and typically use start/end events. Remember that most mode-start events require parallel mode-end events.

Be sure to schedule the start of a Holiday mode so that its events are timed properly in regard to events of the normal operating mode.

For example, a setting of Holiday mode may be to leave the lobby doors locked. Normal mode, however, always unlocks the lobby doors at 7 AM. If Holiday mode starts on Monday morning at 8 AM, and no schedule has been created to lock the doors when the Holiday mode starts, the lobby doors will already have been unlocked by Normal mode an hour before; therefore, the lobby doors will remain in an *unlocked* state throughout the Holiday mode.

One way to keep the doors locked is to schedule Holiday mode to start when the doors are still in a locked state (prior to 7 AM). Another option is to make a mode-start event that locks the doors when Holiday mode goes into effect.

When you set up a Holiday mode, you do not need to set up runtime events unless you want weekly and daily cycles to occur. If you want any of the runtime events in your normal operating mode to occur during your holiday mode, you must duplicate those runtime events within Holiday mode.

Table 16-3 gives examples of start/end and runtime events that you might set up for a holiday. Notice that the chart does not show a parallel mode-end event for each mode-start event that locks a lobby door. The mode-end event is unnecessary because the doors will unlock and lock on schedule when the system returns to normal operating mode.

Table 16-3: Example of Holiday-Mode Settings

Event	Form	Schedule
Holiday Lights On	Outgroup Events	Time
Lock Lobby Door 1	Door Events	At Mode Start
Lock Lobby Door 2	Door Events	At Mode Start
Allow Maintenance Crew (Assign a category to this area that allows access to a maintenance crew starting at 8 AM Mon-Fri during the holiday.)	Area Events	08:00 MTWTF
Deny Maintenance Crew (Remove the maintenance category from the area at 5 PM Mon-Fri.)	Area Events	17:00 MTWTF

Setup

➤ **To create a mode:**

1. Select **Schedule**, then **Mode Creation**.
2. Click **New**.
3. Complete the **Mode Creation** form. For a description of each field, see Figure 16-1.
4. Click **Save**.

The Mode Creation Form

Use the **Mode Creation** form (Figure 16-1) to define each system operating mode. Operating modes are an administrative decision, as each facility has unique requirements.

Examples of *scheduled* operating modes are **Normal** mode and **Holiday** mode. Examples of *command* operating modes are **Emergency** mode or **Fire** mode, which can be initiated by the operator at any time. (See "Changing Modes" on page 16.7.) A mode that you can design to provide tighter security in case working conditions change from the routine is **Restricted-access** mode, which can be scheduled or commanded.

After a mode is created on the **Mode Creation** form, you will define its characteristics by using the various **Events** forms.

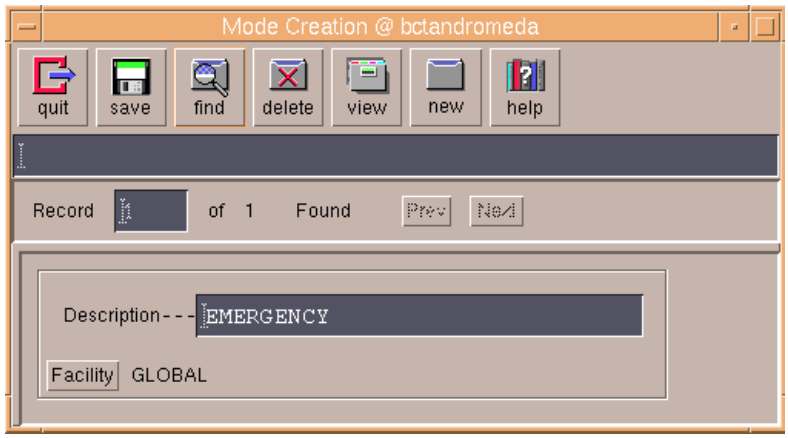


Figure 16-1. Mode Creation Form

Description

Type any alphanumeric combination (1 to 30 alphanumeric characters) for **Description**. For example, **`Fire Drill`**.

Facility

Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

Changing Modes

How to Change Mode by Command

➤ **To change the mode by command:**

1. Select **Control**, then **Mode Command**.
2. Click **New**.
3. Complete the **Mode Command** form. For a description of each field, see Figure 16-2.
4. Click **Save**.

The Mode Command Form

Use the **Mode Command** form (Figure 16-2) to change your system operating mode immediately. For example, emergency events (such as fire, accident, or work disruption) require an immediate change to a different operating strategy. **Mode Command** lets you do this.

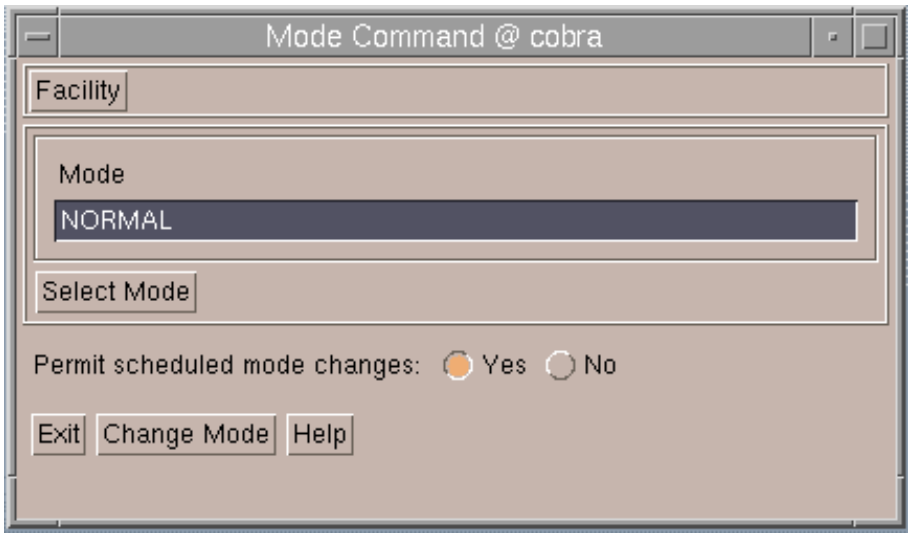


Figure 16-2. Mode Command Form

Facility

Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

Mode

Click the **Select Mode** button to display the **Modes** picklist. Select the desired operating mode, then click **Ok**.

Permit scheduled mode changes:

Select **Yes** or **No**, to indicate whether you want the system to allow future mode changes to occur as scheduled. You can change this option even if you don't change the mode itself.

Yes
Yes allows scheduled mode changes to occur.

No
No allows you to override scheduled mode changes in an emergency. For example, if you change to an emergency mode on the day before a scheduled holiday and you permit scheduled mode changes to occur, the system will switch to holiday mode as scheduled. If you do not permit scheduled changes to occur, the system will stay in the emergency mode until you use the **Mode Command** form to change the mode again.

Exit

Click **Exit** to close the **Mode Command** form.

Change Mode

Click **Change Mode** to tell the system to change to the selected mode and / or to allow or disallow scheduled mode changes.

How to Change Mode by Schedule

To have the system return to normal operations when the mode event is over, schedule another mode event that activates Normal mode. For example, the Christmas Holiday mode could be triggered by a Start Christmas mode event scheduled at 5 PM on Christmas Eve, then returned to Normal mode by an End Christmas mode event scheduled at 7 AM on the day after Christmas.

When the system enters a new mode, it does not execute events for the new mode that are scheduled to occur before the new mode starts. For example, if an event scheduled for 7 AM in normal operating mode unlocks the lobby doors, but the system does not return to normal mode until 8 AM, then the lobby doors will remain locked until the next day at 7 AM.

NOTE

EXCEPTION: If communication with the micro is lost, when the micro resets it will go back to midnight and execute all events scheduled to begin from midnight until the current time. If the event that was in progress, when the micro reset, was scheduled to start before midnight, the micro will not recognize it and will default to the normal mode. To ensure that a schedule is restored when a micro resets, schedule events to begin after midnight, for example 00:01.

If you schedule or command the system to return to normal operating mode after the time when scheduled runtime events for normal mode are supposed to occur, it is a good idea to schedule start/end events such as unlocking (or locking) the lobby doors. See "Start/End Events" on page 16.12.

It is important to note that if there are three or more modes in the system, activating an event at mode end does not determine the mode to which the system is switching. For example, assume the following three modes are in the system, **Normal**, **Holiday**, and **Emergency**. If the system is currently in **Holiday** mode, at the *end* of **Holiday** mode , the system could switch to either **Normal** or **Emergency** mode. Therefore, it is recommended that you activate an event at mode start, if there are three or more modes in the system.

➤ **To change a mode by schedule:**

1. Select **Schedule**, then **Mode Creation**.
2. Click **New**.
3. Complete the **Mode Creation** form. For a description of each field, see Figure 16-1.
4. Click **Save**.

The Mode Events Form

Use the **Mode Events** form (Figure 16-3) to assign the starting date and time to a mode that goes into effect on a specific calendar date. This is known as a **Mode Event**. For example, mode events are used to schedule the various holidays (assigning each the Holiday Mode).

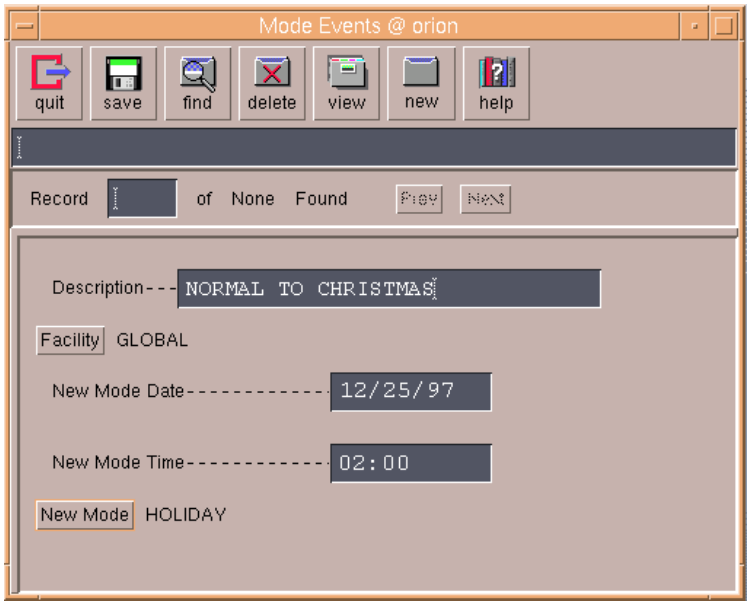


Figure 16-3. Mode Events Form

Description

Type any alphanumeric combination (1 to 30 alphanumeric characters) for **Description**. For example, **`Normal to Thanksgiving`**.

Facility

Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

New Mode Date

Type the date this mode event begins.

New Mode Time

Type the time this mode event begins.

New Mode

Click the **New Mode** button to display the **Modes** picklist. Select the mode that is to go into effect during this mode event, then click **Close** to close the picklist.

Scheduling Events

Use the **Events** forms to define and schedule the desired characteristics for **Area Events**, **Reader Events**, **Door Events**, **Alarm Events**, **Ingroups Events**, **Outgroups Events**, **Backup Events**, or **Report Events**, and assign the appropriate mode to each of them.

Two types of event scheduling options are available: **Runtime** and **Start/End**.

- **Runtime** lets you schedule an event to cycle within a mode, and can occur at a particular time on any days of the week.
- **Start/End** schedules the event to take place only once, either at mode start or at mode end.

NOTE

Schedules that run on the micros can update the database. This is configurable on the **Parameters** form using the field **Schedules Update Database**. With this feature enabled, as long as there is communication with the micro, the host will reflect the scheduled state of the device (For example, if a door is scheduled to unlock at 8 AM, the host record will be updated to reflect the change.) If this feature is disabled, the host record will only reflect the host database information.

Runtime Events

Runtime Events are events scheduled to occur in weekly cycles for selected areas, readers, doors, alarms, input groups, and output groups. A runtime event can occur on one or more days per week at the start time that you select. Runtime events are frequently used for the normal operating mode.

Runtime events must be created in "pairs," so that the entire cycle of events can be completed. Therefore, you need to create two events for each cycle and make sure both events are assigned to the same mode.

For example, an "unlock door at 8 AM" event is paired with a "lock door at 5 PM" event to define a 24-hour cycle for that door. Both events are scheduled for weekdays only. The door does not require a runtime schedule for weekends, because the door locks at 5 PM on Friday and remains locked until Monday at 8 AM when the "unlock door" event occurs (unless someone manually unlocks the door).

Runtime events can be used to allow certain people access to an area at certain times, such as with multiple shifts of workers. You can assign an area certain categories from 8 AM to 5 PM, and other categories for later shifts or for weekends. (Each shift must have its own category, which must be on the appropriate badges.) To do this, set up a series of Area Events that change categories. After you set the days and the time for each

event (category change) to occur, the events continue to occur on a weekly cycle.

The fields that control runtime events appear on each of the events scheduling forms: **Area Events**, **Reader Events**, **Door Events**, **Alarm Events**, **Ingroups Events**, **Outgroups Events**, **Backup Events**, or **Report Events**. Refer to Figure 16-4 for the runtime portion of the **Events** form .

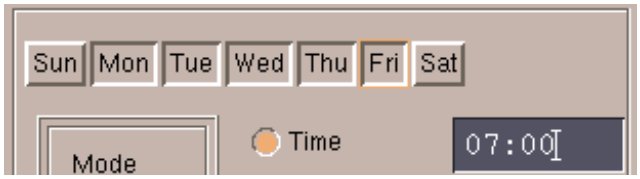


Figure 16-4. Runtime Portion of an Events Form

➤ **To set up a runtime event:**

1. Select **Schedule**, then the **Events** form that you want to define.
2. Specify the parameters for this event. (Each form is detailed in this chapter.)
3. Assign a weekly cycle time to this event. Click on **Time** to activate the day-of-the-week buttons, then click the button of each day on which you want this event to occur.
4. Type the time that this event should begin (on all specified days) in the **Time** box. If you do not want this event to happen at the same time on each selected day, then you must define additional event schedules for those days that are different (and assign them all to the same mode). For example, if you want lobby doors to lock at 7 PM on weekdays and at 5 PM on weekends, two separate events would have to be created.
5. Click **Save**.
6. Click **New** to create another event.

Start/End Events

Start/end events occur only once during the mode, either at mode start or at mode end. Start/end events are frequently used for **Emergency** and **Holiday** modes.

A mode-start event may require a parallel mode-end event to “undo” the change. This may not be necessary, however, since the next normal mode change may accomplish the desired change.

For example, a Fire Mode could be set up using mode-start and mode-end events. When the operator uses the **Mode Command** form to select Fire

Mode, all the events associated with this mode will immediately activate, such as triggering a continuous siren and unlocking all doors so people can exit or enter the building without badges.

The fields that control start/end events appear on each of the **Events** forms. Refer to Figure 16-5 for the start/end portion of the **Events** form .

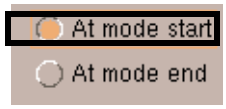


Figure 16-5. Start/End Portion of an Events Form

➤ **To set up a Start/End event:**

1. Select **Schedule**, then the **Events** form that you want to define.
2. Specify the parameters for this event. (Each form is detailed in this chapter.)
3. Click on **At Mode Start** if you want the event to activate at the start of the mode.
4. Click on **At Mode End** if you want the event to activate at the end of the mode.
5. Click **Save**.
6. Click **New** to create another event.

Area Events

To schedule changes for all the readers, doors, and routings in an area, use an area event. An event can also put the entire area online or offline.

Use the **Area Events** form (Figure 16-6, Figure 16-7 and Figure 16-11) to define area events for each mode. You can create events that affect all doors and readers in an area. Defining an event requires you to select a mode, set the time of the event, select an area, and specify one or more changes to the area, readers, or doors.

NOTE

Do not set up the **Area Events** form to match the fields on the **Area** form. Fields that do not need to be scheduled should not be selected, for example, if the area is already online, do not select Online on the **Area Event** schedule.

Setup

➤ **To create an area event:**

1. Select **Schedule**, then **Area Events**.
2. Enter a description for this event.
3. Set the time for this event to occur, by selecting days of the week and typing a time, or by selecting **At Mode Start** or **At Mode End**.
4. Click the **Select Mode** button to display the **Modes** picklist. Select the desired mode for this event, then click **Ok**.
5. Click the **Select Area** button to display the **Areas** picklist. Select the area where this event should occur, then click **Ok**.
6. Specify whether the area selected is to be **Online** or **Offline**. If online, readers assigned to the area may open doors.
7. If any message destinations should change during this event, change the routing specifications for **Valid**, **Invalid**, **Suspended**, **Lost**, **Unknown**, or **Antipassback**. Click the appropriate **Routing** button to display the **Routings** picklist. Select the new routing, then click **Close**. Any **Routing** button left blank will retain its current routing destination.
8. To change the area's categories during this event, click the **Manage** button. For more information on Category Management, see "Managing Category Assignment" on page 13.8.

9. Select the category you wish to change.

   Result: The slot to which the category is assigned will be highlighted.

10. Click **Remove**.

    Result: The category list on the **Category Manager** window will be refreshed and the category will be displayed with no slot number beside it.

11. Select the category and the new slot to which you want to assign it.

12. Click **Add**.

13. Click **Close** to return to the **Area Events** form.

    Result: The category list on the **Area Events** form will be refreshed and will display the category and the new slot number to which it was assigned.

14. In the **Reader** box, change the fields that describe how readers in this area will operate after this event occurs. See Figure 13-10, "Readers Form (Bottom Right)," on page 13.25 for information on changing these fields. Unchanged fields retain the previously existing values. (These values are subject to other events that may change the values for single readers.)

15. In the **Door** box, change the fields that describe how doors in this area will operate after this event occurs. Unchanged fields retain the previously existing values. (These values are subject to other events that may change the values for single doors.) Also, specify any new routing destinations for **Door Held Open** and **Door Forced Open** alarms.

16. Click **Save**.

17. Click **New** to add another area event, or **Quit** to exit the **Area Events** form.

The Area Events Form

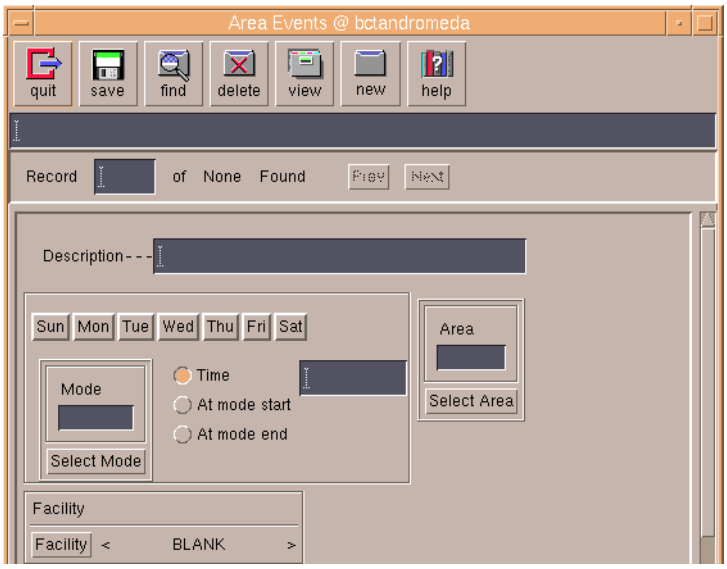


Figure 16-6. Area Events Form (Top)

Description

Type an area **Description** up to 30 alphanumeric characters long; for example, General Access. This event may include more than one location if the facility has multiple entrances or buildings.

Mode

Select the mode in which the area event will occur. An event will not take place, if it is not assigned to a mode and it will only occur in those modes to which it is assigned.

Days of the Week

If the event is a **Run Time** event, select the days of the week that the event will occur.

Time

If the event is a **Run Time** event, select the time of day that the event will start. Remember to schedule another event as the pair of this one to return to the previous state.

At mode start

If this is a **Start/End** event, click **At mode start** if you want the event to activate at the start of the mode.

At mode end

If this is a **Start/End** event, click **At mode end** if you want the event to activate at the end of the mode.

Facility

Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

Area

Select the area in which the event will occur.

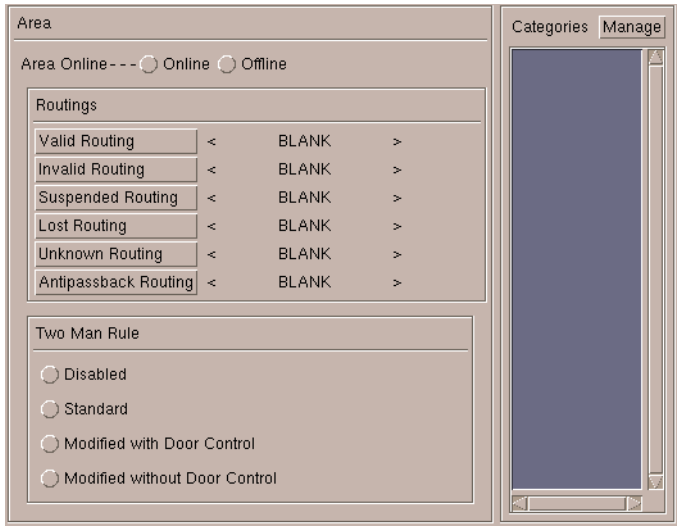


Figure 16-7. Area Events Form (Middle)

Area Online/Offline

Use an area event if you want all readers in the area to operate offline: not able to unlock doors, but able to read badges, pass badge data, route and archive access messages, and activate associated alarms.

Routings

Routings for selected badge activities (valid, invalid, suspended, lost, unknown, antipassback) in an area can be routed to one or all destinations: log, monitor, printers. For example:

- For after hours in a high security area, you can set up an area event that routes all badge activity to the **Activity Monitor**; or
- You can set up an area event to route selected activities to a printer or to online history files to be examined later.

Two Man Rule

These radio buttons are enabled only if the operator has **Occupancy Control** permission granted. To leave **Two Man Rule** unaffected, when the event is triggered, none of the radio buttons should be selected.

NOTE

If the micro is unable to activate a scheduled **Two Man Rule** event, an alarm, **Schedule did not run**, will be sent to the **Alarm Monitor**. This could occur if the area configuration changed since the schedule was set up. For example, if the **Logical Reader Function** of a reader in the area was inadvertently changed to **Normal**, the micro would be unable to activate the schedule.

Disabled
Select this radio button to deactivate Two Man Rule mode.

Standard
Select this radio button to activate the standard Two Man Rule mode which ensures that at least two badge holders occupy a given controlled space.

Modified with Door Control
Select this radio button to activate the Modified Two Man Rule mode which restricts badge holder access to a controlled area based on their M2MR category type. The first two badge holders to enter a controlled area must be team members. At least two team members must be present in the controlled space until all Guests have exited. Additionally, a team member within the controlled space must press a door release button to allow entry to any subsequent badge holders. The door release button must be pressed within the time specified in the Door Release Timeout field or the door will not be unlocked.

Modified Without Door Control
Select this radio button to activate the Modified Two Man Rule mode which restricts badge holder access to a controlled area based on their M2MR category type. The first two badge holders to enter a controlled space must be team members. At least two team members must be present in the controlled space until all Guests have exited.

Categories

If the **Increased Category** feature was selected during installation, 32 categories are available for assignment to an area or an area event. Otherwise, 10 categories are available for assignment. This list box contains the active badge categories, ordered by slot number. To access an area, a badge must match at least one category that is assigned to that area.

Manage

Click the **Manage** button to display the **Category Manager** window, Figure 13-4 on page 13.9, from which you may add, remove, or replace a category in a slot. You may also apply filters to the categories that are displayed in the categories list box. For more information on Category Management, see "Managing Category Assignment" on page 13.8.

You can assign categories to an area and then schedule Area Events to change the categories depending on access requirements. Categories are position-sensitive, so be careful not to overwrite categories that should remain intact. For example:

- An area event can change the categories on an area for a specific time to control which badge holders have access to the area during that time. If you assign a different category to each computer-operator shift, then you can control when certain staff members can access the computer room. Set up area events that add and change the categories from the area.
- A series of area events that add and change a single category can control the time frame in which a contractor's job is performed. For example, one area event adds a category to the R&D Lab at 4:00 PM to allow the cleaning crew access; another area event replaces the category at 4:30 PM to restrict the time spent in this area. You can use the same strategy to restrict access to a computer vault where daily backups are stored. The categories on an area control who can enter the area, when they can enter, and how long they can remain.

An area event can change the categories of an area at a specific time. For example, two MIS shifts need to access the computer room during separate times, but the MIS Manager needs access 24 hours a day. The two shifts also require a 30-minute overlap during shift changes.

- First, create three categories, using the **Categories** form, MIS 24-Hour, MIS Shift 1 and MIS Shift 2.
- To provide 24-hour access for the MIS manager, assign the MIS 24-Hour category on the **Areas** form. (Do not overwrite this category with an area event.)

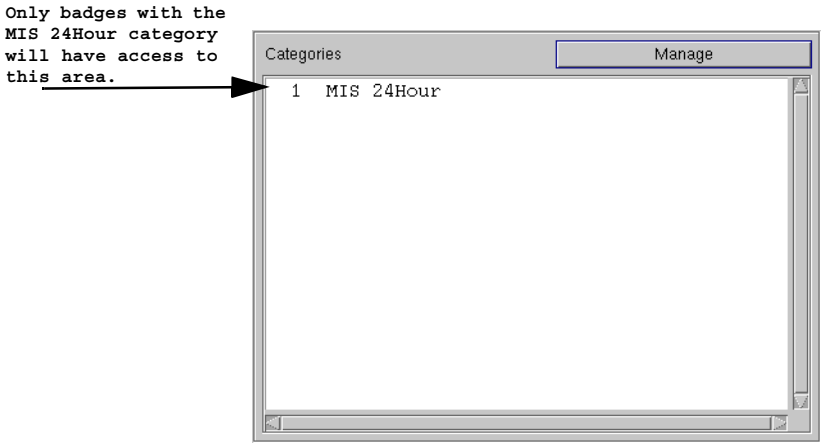


Figure 16-8. Areas Form, Categories Window

- To provide access to the two shifts, create separate categories, MIS Shift 1 and MIS Shift 2 to an area event using the **Area Events** form. Use the category, **NO ACCESS (use w/sched only)** to end the event. When you assign the area events to a slot, remember that the MIS 24Hour category was placed in the first position (slot) on the **Areas** form; since categories are position sensitive, when you *add* a category, do not overwrite an existing category. Notice that categories entered on previous forms do not display on the current **Events** form, so you must be familiar with what is already in place.

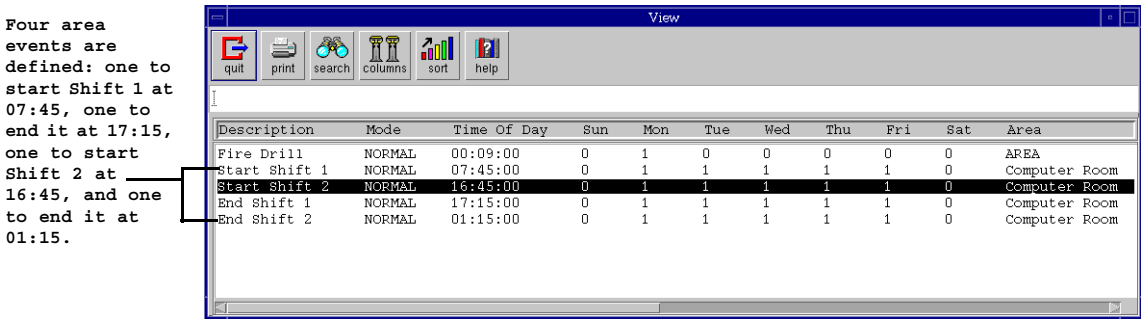

Four area events are defined: one to start Shift 1 at 07:45, one to end it at 17:15, one to start Shift 2 at 16:45, and one to end it at 01:15.
View
quit
print
search
columns
sort
help
Description Mode Time Of Day Sun Mon Tue Wed Thu Fri Sat Area
Fire Drill NORMAL 00:09:00 0 1 0 0 0 0 0 AREA
Start Shift 1 NORMAL 07:45:00 0 1 1 1 1 1 0 Computer Room
Start Shift 2 NORMAL 16:45:00 0 1 1 1 1 1 0 Computer Room
End Shift 1 NORMAL 17:15:00 0 1 1 1 1 1 0 Computer Room
End Shift 2 NORMAL 01:15:00 0 1 1 1 1 1 0 Computer Room

Figure 16-9. Area Events Form, View Window

- When the area events occur, the **Areas** form will reflect the new categories.

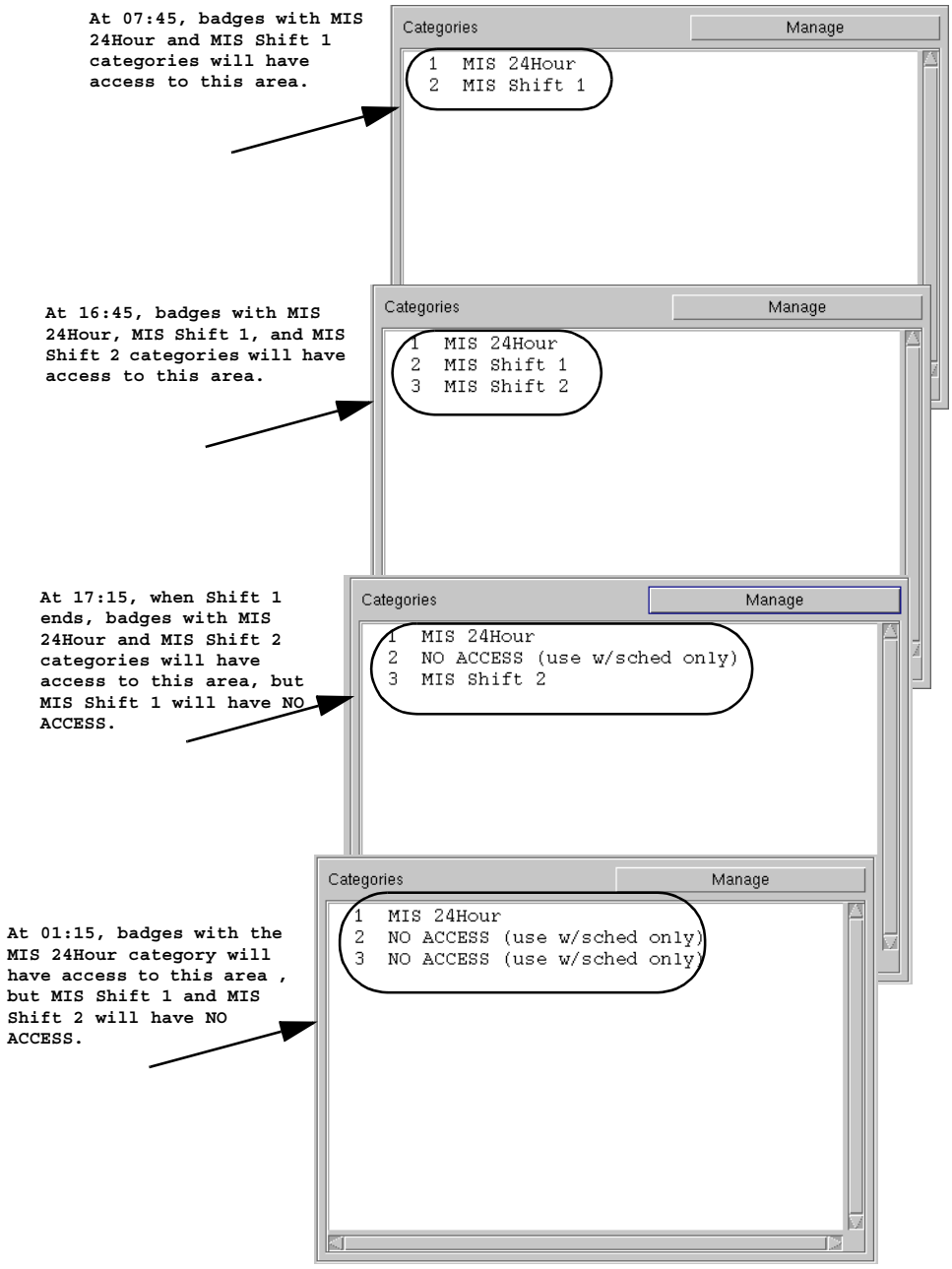

At 07:45, badges with MIS 24Hour and MIS Shift 1 categories will have access to this area.
Categories
Manage
1 MIS 24Hour
2 MIS Shift 1
At 16:45, badges with MIS 24Hour, MIS Shift 1, and MIS Shift 2 categories will have access to this area.
Categories
Manage
1 MIS 24Hour
2 MIS Shift 1
3 MIS Shift 2
At 17:15, when Shift 1 ends, badges with MIS 24Hour and MIS Shift 2 categories will have access to this area, but MIS Shift 1 will have NO ACCESS.
Categories
Manage
1 MIS 24Hour
2 NO ACCESS (use w/sched only)
3 MIS Shift 2
At 01:15, badges with the MIS 24Hour category will have access to this area , but MIS Shift 1 and MIS Shift 2 will have NO ACCESS.
Categories
Manage
1 MIS 24Hour
2 NO ACCESS (use w/sched only)
3 NO ACCESS (use w/sched only)

Figure 16-10. Examples: Areas Form, Categories Window

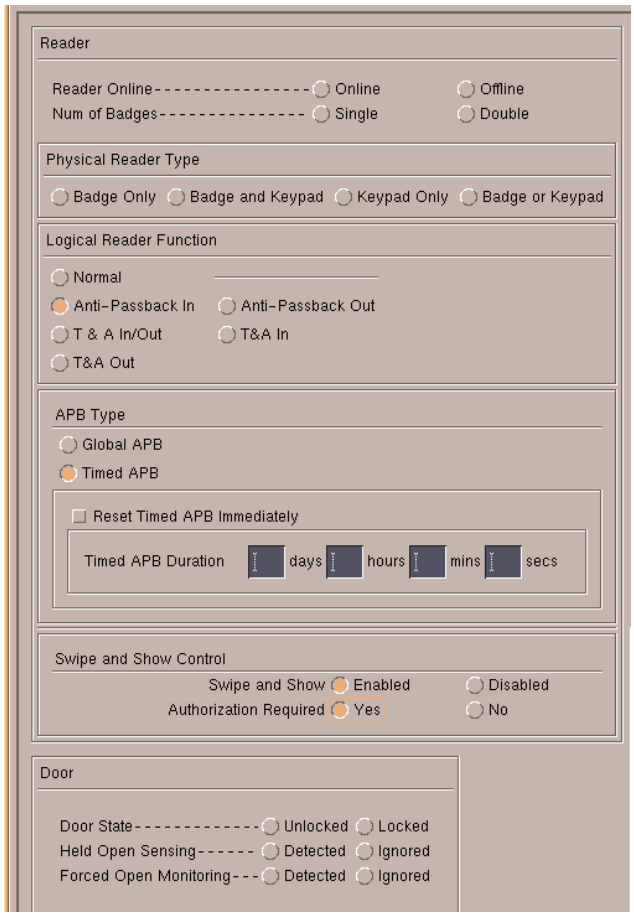


Figure 16-11. Area Events Form (Bottom)

Reader

Reader Online/Offline

Use an area event if you want all readers in the area to operate offline: not able to unlock doors, but able to read badges, pass badge data, route and archive access messages, and activate associated alarms.

Number of Badges

There are two badge controls available: **Single** and **Double**. Single means only one valid badge is required. Double means that two complete, valid, and distinct transactions are required.

Physical Reader Type

There are four ways to define the physical reader type of a reader: **Badge Only**, **Badge And Keypad**, **Keypad Only**, and **Badge Or Keypad**. A reader's physical type may be changed with a reader event.

For example: To provide higher security at certain hours, you can define a badge-and-keypad reader as a badge-only reader from 8 AM to 5 PM and a badge-and-keypad reader from 5 PM to 8 AM. To gain access after 5 PM, a badgeholder must swipe his badge and also use the keypad to enter a unique PIN code.

Logical Reader Function

To change the way the reader functions, schedule a reader event that changes the logical reader function: **Normal**, **Anti-passback In**, **Anti-passback Out**, **Time & Attendance In**, **Time & Attendance Out,** or **Time & Attendance In/out**.

For example: To provide higher security after hours, you can set up certain readers as anti-passback-in readers and others as anti-passback-out readers;
or
To provide data about shifts that badge in and out of an area, you can set up a reader event that changes a normal reader to a Time & Attendance In (or Out) reader.

APB Type

To change the way the anti-passback feature functions, schedule an area event that changes the APB Type of all readers in the area: **Global APB** or **Timed APB**.

Used as the default, **Global APB** allows the reader to function as a normal APB reader;
or
Used to designate the reader as a **Timed APB** reader, a badgeholder's APB status will be set to **In** or **Out** and will return to **Neutral** after a defined period of time. A Timed APB reader is useful in a site where a badgeholder may enter a site by going through an **APB In** reader but is not required to exit the site by going through an **APB Out** reader. If this option is selected, a **Timed APB Duration** must also be defined. A Timed APB status is local to the micro.

Swipe and Show Control

This feature is only visible if you have the Image package installed. You can schedule a specific time period for any of the following functions to be active:

Swipe and Show
Select Enabled to enable Swipe And Show on this reader. Select Disabled to disable Swipe And Show on this reader.

NOTE

A reader cannot be defined as **Toggle** when **Swipe And Show** is **Enabled**. See “Toggle” on page 13.28. If **Toggle** is set to **Yes** and either **Authorization Required** or **Authorization Not Required** is turned on, photos will be displayed for invalid transactions, but not valid transactions.

Authorization Required
Select **Yes** to designate a reader that will display a photo on the Activity Monitor and require an operator to unlock a door. Select **No** to designate a reader that will display a photo on the Activity Monitor and will unlock a door without operator intervention.

NOTE

The **Yes** and **No** buttons are not available unless **Swipe And Show Enabled** is selected.

Access cannot be granted through readers defined as **Authorization Required** while communications to the micro are down.

Door

Door State: Unlocked/Locked
You can set up area events to open all doors in an area during normal business hours--for example, lobby doors or common interior doors such as hallways.

Held Open Sensing: Detected/Ignored
You can set up area events to ignore doors that are held open. For example, lobby doors or common interior doors such as hallways that are held open in an area during peak business hours.

Forced Open Monitoring: Detected/Ignored
You can set up area events to ignore doors that are forced open in an area. For example, to keep a loading dock door open indefinitely during business hours without an alarm occurring.

Reader Events

If you want to change the characteristics of a single reader (rather than a group of readers in an area), use a reader event instead of an area event.

Use the **Reader Events** form (Figure 16-12) to define reader events for each mode. Defining an event requires you to select a mode, set the time of the event, select a reader, and specify one or more changes to the reader.

NOTE

Do not set up the **Reader Events** form to match the fields on the **Reader** form. Fields that do not need to be scheduled should not be selected, that is, if the reader is already online, do not select **Online** on the **Reader Event** schedule.

Setup

➤ **To create a reader event:**

1. Select **Schedule**, then **Reader Events**.
2. Enter a description for this event.
3. Set the time for this event to occur, either by selecting days of the week and typing a time or by selecting **At Mode Start** or **At Mode End**.
4. Click the **Select Mode** button to display the **Modes** picklist. Select the desired mode for this event, then click **Ok**.
5. Click the **Select Reader** button to display the **Readers** picklist. Select the reader at which this event should occur, then click **Ok**.
6. Specify whether the reader selected is to be **Online** or **Offline**. If **Online**, readers assigned to the area may open doors.
7. In the **Reader** section, change the fields that describe how the reader is to operate after this event occurs. Unchanged fields retain the previously existing values.
8. Click **Save**.
9. Click **New** to add another reader event, or **Quit** to exit the **Reader Events** form.

The Reader Events Form

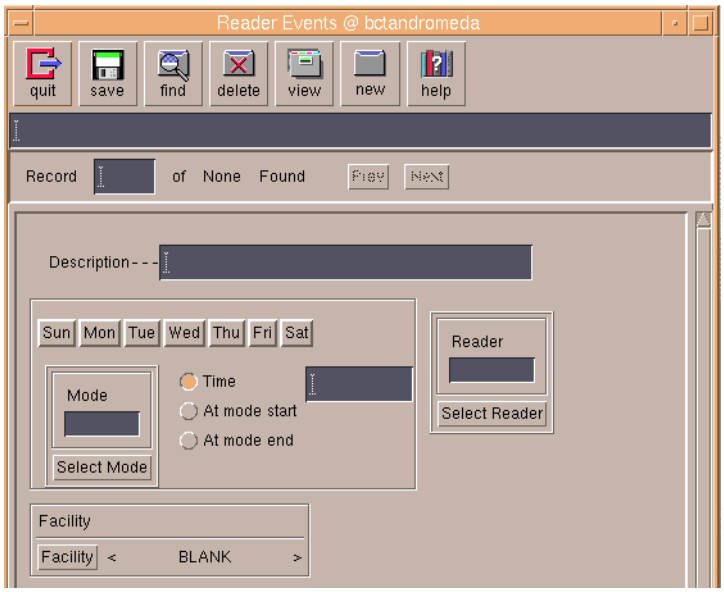


Figure 16-12. Reader Events Form - Top

Description

Type a reader **Description** up to 30 alphanumeric characters long; for example, Lobby Door.

Mode

Select the mode in which the reader event will occur. An event will not take place, if it is not assigned to a mode and it will only occur in those modes to which it is assigned.

Days of the Week

If the event is a **Run Time** event, select the days of the week that the event will occur.

Time

If the event is a **Run Time** event, select the time of day that the event will start. Remember to schedule another event as the pair of this one. For example, if something is turned on every day at 8 AM, it must be turned off at some time later that day.

At mode start

If this is a **Start/End** event, click **At mode start** if you want the event to activate at the start of the mode.

At mode end

If this is a **Start/End** event, click **At mode end** if you want the event to activate at the end of the mode.

Facility

Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

Reader

Select the reader where the event will occur.

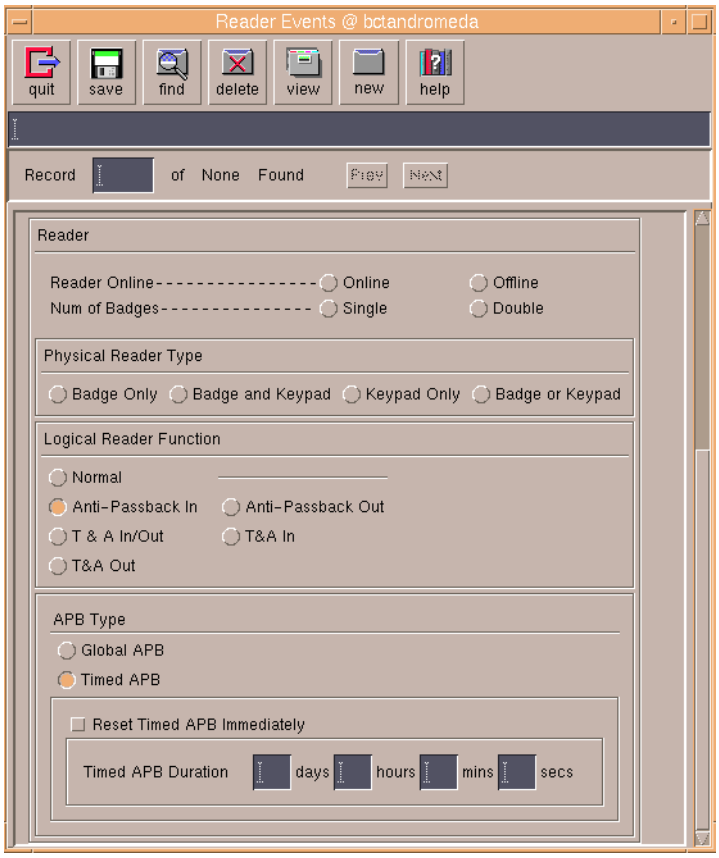


Figure 16-13. Reader Events Form - Bottom

Reader Online/Offline

Readers that have a physical state of **Enabled** on the **Readers** form (allowed to read badges) can be set **Online** or **Offline**.

For example: To prevent all access to a room, yet record all access attempts, use a reader event to set that room's reader **Offline**.

Number of Badges

There are two badge controls available: **Single** and **Double**. **Single** means only one valid badge is required. **Double** means that two complete, valid, and distinct transactions are required.

Physical Reader Type

There are four ways to define the physical reader type of a reader: **Badge Only**, **Badge And Keypad**, **Keypad Only**, and **Badge Or Keypad**. A reader's physical type may be changed with a reader event.

For example: To provide higher security at certain hours, you can define a Badge-and-Keypad reader as a Badge-only reader from 8 AM to 5 PM and a Badge-and-Keypad reader from 5 PM to 8 AM. To gain access after 5 PM, a badgeholder must swipe his badge and use the keypad to enter a unique PIN code.

Logical Reader Function

To change the way the reader functions, schedule a reader event that changes the logical reader function: **Normal**, **Anti-passback In**, **Anti-passback Out**, **Time & Attendance In/out**, **Time & Attendance In**, or **Time & Attendance Out**.

For example: To provide higher security after hours, you can set up certain readers as **Anti-passback-In** readers and others as **Anti-passback-Out** readers;
or
To provide data about shifts that badge in and out of an area, you can set up a reader event that changes a normal reader to a **Time & Attendance In** (or out) reader.

APB Type

To change the way the Anti-passback feature functions, schedule a reader event that changes the APB Type: **Global APB** or **Timed APB**.

Used as the default, **Global APB** allows the reader to function as a normal APB reader;
or
Used to designate the reader as a **Timed APB** reader, a badgeholder's APB status will be set to **In** or **Out** and will return to **Neutral** after a defined period of time. A **Timed APB** reader is useful in a site where a badgeholder may enter a site by going through an **APB In** reader but is not required to exit the site by going through an **APB Out** reader. If

this option is selected, a **Timed APB Duration** must also be defined. A Timed APB status is local to the micro.

Swipe and Show Control

This feature is only visible if you have the Image package installed. You can schedule a specific time period for any of the following functions to be active:

- ***Swipe and Show***: Select **Enabled** to enable **Swipe and Show** on this reader. Select **Disabled** to disable **Swipe and Show** on this reader.

NOTE

A reader cannot be defined as **Toggle** when **Swipe And Show** is **Enabled**. See “Toggle” on page 13.28. If **Toggle** is set to **Yes** and either **Authorization Required** or **Authorization Not Required** is turned on, photos will be displayed for invalid transactions, but not valid transactions.

- ***Authorization Required:*** Select **Yes** to designate a reader that will display a photo on the **Activity Monitor** and require an operator to unlock a door. Select **No** to designate a reader that will display a photo on the **Activity Monitor** and will unlock a door without operator intervention.

NOTE

The **Yes** and **No** buttons are not available unless **Swipe And Show Enabled** is selected.

Access cannot be granted through readers defined as **Authorization Required** while communications to the micro are down.

Door Events

When you want to change the characteristics of a single door (rather than a group of doors in an area) use a door event instead of an area event.

Use the **Door Events** form (Figure 16-14) to define door events for each mode. Defining an event requires you to select a mode, set the time of the event, specify a door, and change one or more of the operating characteristics of the door.

NOTE

Do not set up the **Door Events** form to match the fields on the **Door** form. Fields that do not need to be scheduled should not be selected, that is, if the door is already unlocked, do not select Unlocked on the door schedule.

Setup

➤ **To create a door event:**

1. Select **Schedule**, then **Door Events**.
2. Enter a description for this event.
3. Set the time for this event to occur, either by selecting days of the week and typing a time or by selecting **At Mode Start** or **At Mode End**.
4. Click the **Select Mode** button to display the **Modes** picklist. Select the desired mode for this event, then click **Ok**.
5. Click the **Select Door** button to display the **Doors** picklist. Select the door at which this event should occur, then click **Ok**.
6. In the **Door** section, change the fields that describe how the door is to operate after this event occurs. Unchanged fields retain the previously existing values.
7. Click **Save**.
8. Click **New** to add another door event, or **Quit** to exit the **Door Events** form.

The Door Events Form

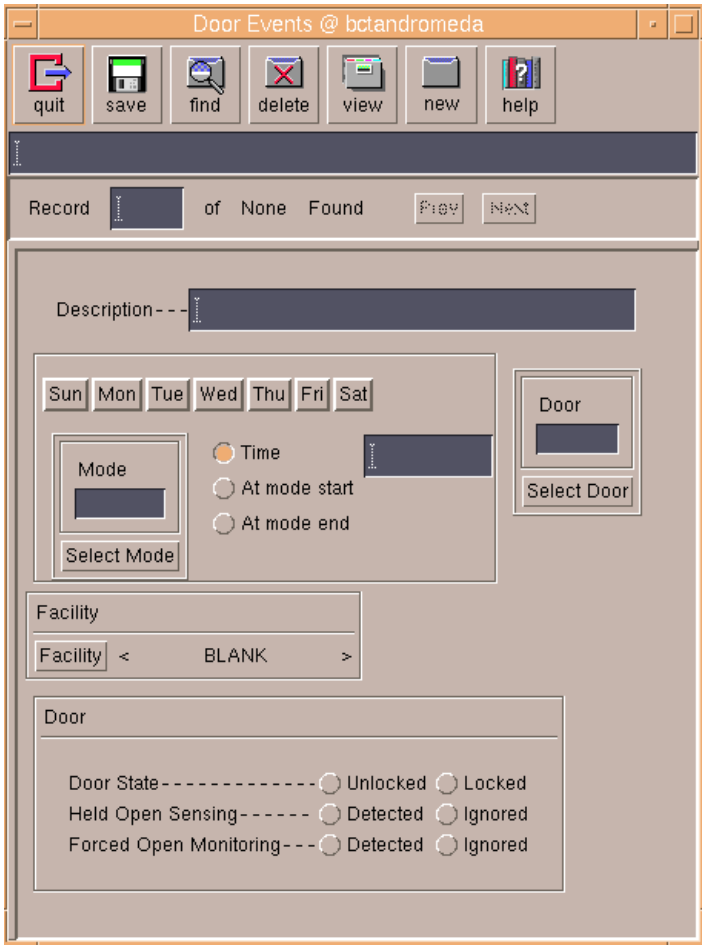


Figure 16-14. Door Events Form

Description

Type a door **Description** up to 30 alphanumeric characters long; for example, Lobby Door.

Mode

Select the mode in which the door event will occur. An event will not take place, if it is not assigned to a mode and it will only occur in those modes to which it is assigned.

Days of the Week

If the event is a **Run Time** event, select the days of the week that the event will occur.

Time

If the event is a **Run Time** event, select the time of day that the event will start. Remember to schedule another event as the pair of this one. For example, if something is unlocked every day at 8 AM, it must be unlocked at some time later that day.

At mode start

If this is a **Start/End** event, click **At mode start** if you want the event to activate at the start of the mode.

At mode end

If this is a **Start/End** event, click **At mode end** if you want the event to activate at the end of the mode.

Facility

Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

Select Door

Select the door where the event will occur.

Door State

To schedule an individual door in an area to unlock at the same time each day, use a door event that sets the **Door State** field to **Unlocked**.

NOTE

An area event that locks all area doors and occurs after this door event will also lock this individual door.

Held Open Sensing

To allow shipping and receiving to keep a loading dock door open indefinitely during business hours without an alarm occurring, set **Held-open Sensing** to **Ignored**. This event overrides the **Detected** setting for the same function on the **Doors** form.

Forced Open Monitoring

Select **Detected** to allow an alarm condition on this door to occur immediately when the door is forced open without a valid badge read or exit device. Select **Ignored** if the monitoring function on this door is not used (this may be advisable during the day when people frequently hold the door open).

Alarm Events

When you want to change the characteristics of a single alarm (without changing the input group or output group assigned to the alarm), use an alarm event.

Use the **Alarm Events** form (Figure 16-15) to define alarm events for each mode. Defining an event requires you to select a mode, set the time of the event, select an alarm, and specify one or more changes to the alarm.

Setup

➤ **To create an alarm event:**

1. Select **Schedule**, then **Alarm Events**.
2. Enter a description for this event.
3. Set the time for this event to occur, either by selecting days of the week and typing a time or by selecting **At Mode Start** or **At Mode End**.
4. Click the **Select Mode** button to display the **Modes** picklist. Select the desired mode for this event, then click **Ok**.
5. Click the **Select Alarm** button to display the **Alarms** picklist. Select the alarm that this event should control, then click **Ok**.
6. Specify whether the alarm should be **Online** or **Offline**.
7. If the message destination of this alarm should be changed by this event, click the **Routing** button to display the **Routings** picklist. Select the desired routing, then click **Close**.
8. Click **Save**.
9. Click **New** to add another alarm event, or **Quit** to exit the **Alarm Events** form.

The Alarm Events Form

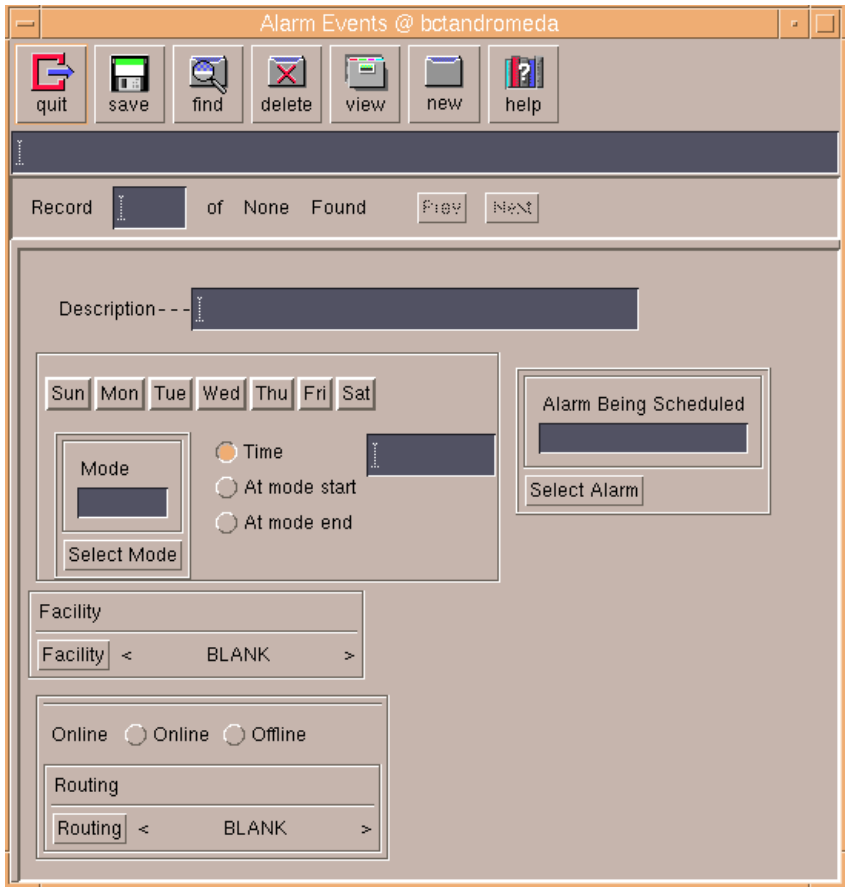


Figure 16-15. Alarm Events Form

Description

Type an alarm event **Description** up to 30 alphanumeric characters long; for example, Door Held Offline 08:00 M-F.

Mode

Select the mode in which the alarm event will occur. An event will not take place, if it is not assigned to a mode and it will only occur in those modes to which it is assigned.

Days of the Week

If the event is a **Run Time** event, select the days of the week that the event will occur.

Time

If the event is a **Run Time** event, select the time of day that the event will start. Remember to schedule another event as the pair of this one. For example, if something is turned on every day at 8 AM, it must be turned off at some time later that day.

At mode start

If this is a **Start/End** event, click **At mode start** if you want the event to activate at the start of the mode.

At mode end

If this is a **Start/End** event, click **At mode end** if you want the event to activate at the end of the mode.

Facility

Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

Alarm Being Scheduled

Select the alarm where the event will occur.

Online/Offline

To ensure that normal daytime activity does not trigger an alarm, use a runtime alarm event to put this alarm offline during the day.

For example, use an alarm event to set this alarm offline before the business day starts (MTWTF at 07:30). Use a parallel alarm event to set this alarm online after hours (MTWTF at 17:00). During the weekend (between Friday at 5 P.M. and Monday at 7:30 A.M.), this alarm is online and does not cycle daily.

To set an alarm online when the facility is closed for a holiday, use an alarm event that does not cycle daily. Use a mode-start alarm event associated with your holiday mode. When the system starts to operate in holiday mode, events that cycle during normal operating mode stop cycling. Set this alarm to remain online until the system switches back to normal operating mode.

NOTE

You may need to schedule a parallel mode-end alarm event (in case the system does not return to normal operating mode) for other scheduled events to occur. However, the preferred way is to schedule the input group offline/online. This way no input activity (ISC) is sent to the host. See “InGroup Events” on page 16.37.

Routing

To send an alarm to a different routing at certain times, schedule an alarm event that specifies the new routing and time. You can send the alarm message to the alarm monitor, a printer, the history log, or to a combination of the three.

For example, if you want invalid-badge alarms to route to the log and monitor during the business day but to the monitor and a printer after hours, set an alarm event for MTWT at 17:00 to start routing invalid-badge alarms to the alarm monitor and to a selected printer. Set a parallel alarm event to occur on MTWTF at 08:00 to start routing the alarm to the history log and monitor. If no one watches the alarm monitor on weekends, another alarm event (F at 17:00) can start routing this alarm to the log and to the printer. On Monday, scheduled alarm events begin to repeat the cycle.

InGroup Events

You can use an input group event to place an input group online or offline and to control what output groups or alarms trigger when this input group activates.

Use the **Ingroups Events** form (Figure 16-16) to define input group events for each mode. Defining an event requires that you select a mode, set the time of the event, and specify one or more changes to the input group.

Setup

➤ **To create an input group event:**

1. Select **Schedule**, then **Ingroups Events**.
2. Enter a description for this event.
3. Set the time for this event to occur, either by selecting a time, by selecting days of the week and typing a time, or by selecting **At Mode Start** or **At Mode End**.
4. Click the **Select Mode** button to display the **Modes** picklist. Select the desired mode for this event, then click **Ok**.
5. Click the **Input Group** button to display the **Ingroups** picklist. Select the input group that this event should control, then click **Ok**.
6. Specify whether the input group should be **Online** or **Offline**.
7. Click one or more of the five **Output Group** buttons (First, Second, etc.) to add or change an output group for this input group event. Remember that output groups are position-sensitive, so be careful not to overwrite an output group that you want to keep activated.
8. Click **Save**.
9. Click **New** to add another input-group event, or **Quit** to exit the **Ingroups Events** form.

The InGroups Events Form

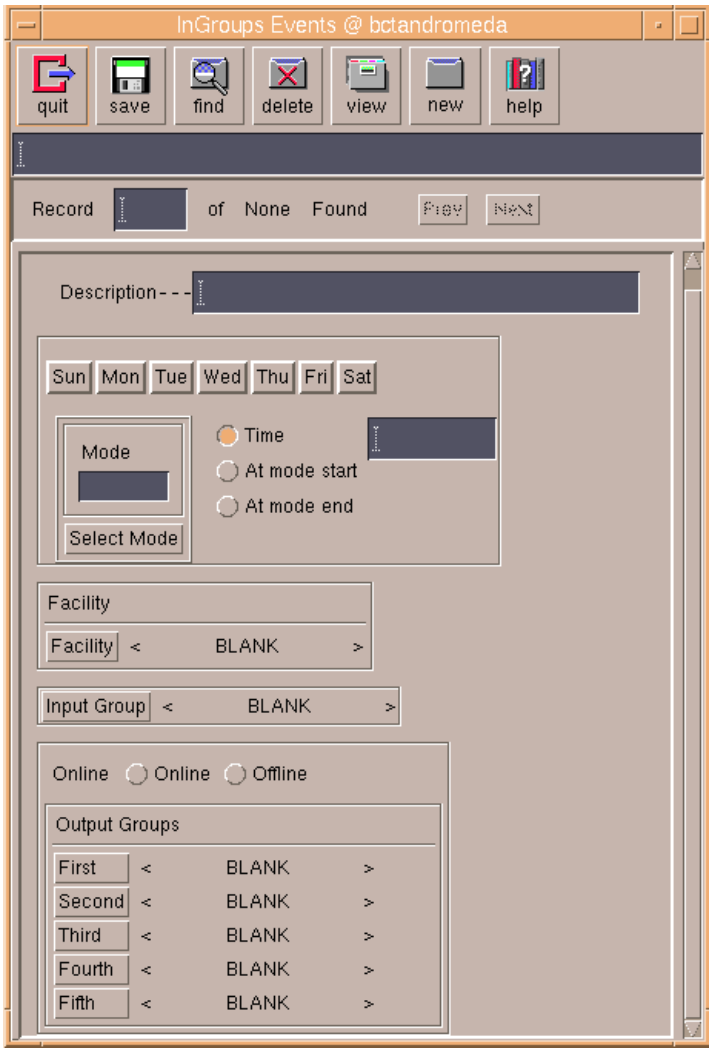


Figure 16-16. InGroups Events Form

Description

Type an input group **Description** up to 30 alphanumeric characters long; for example, Lobby AC Fail Off 17:00 M-F.

Mode

Select the mode in which the input group event will occur. An event will not take place, if it is not assigned to a mode and it will only occur in those modes to which it is assigned.

Days of the Week

If the event is a **Run Time** event, select the days of the week that the event will occur.

Time

If the event is a **Run Time** event, select the time of day that the event will start. Remember to schedule another event as the pair of this one. For example, if something is activated every day at 8 AM, it must be deactivated at some time later that day.

At mode start

If this is a **Start/End** event, click **At mode start** if you want the event to activate at the start of the mode.

At mode end

If this is a **Start/End** event, click **At mode end** if you want the event to activate at the end of the mode.

Facility

Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

Input Group

Select the input group that will be triggered by the event.

Online/Offline

To prevent an associated alarm and / or output group from triggering if the input is triggered, use an input group event to place an input group offline. For example, this event can place an input group offline at a scheduled time on a daily / weekly cycle within the normal operating mode; or this event can be set to occur **At Mode Start** and to continue (with no daily or weekly cycles) until a parallel **At Mode End** event occurs to reverse the change.

For example: For use with Fire mode, you could create an event that sets the fire-detector input group to offline, so that **Open Condition** and / or **Short Condition** state changes do not continue to be detected. This input group event prevents the system from receiving a flood of alarms when a fire occurs. Remember that a mode-start event requires a parallel mode-end event.

You could also schedule an event to place a Motion Detector input group offline during the day and online at night, if after-hours activity in this area indicates a security violation. Or, to conserve electricity after hours, schedule the input group for hallway motion detectors to trigger lights to turn on for a duration--to provide lighting only when required.

Output Groups

NOTE If scheduling outputs, they must reside on the same micro.

An input group event can change the output groups associated with an input group. Output groups are position sensitive and follow the same scheduling rules as categories on the **Area Events** form. (See "Area Events" on page 16.14.) It is possible to overwrite an existing output group, depending on which output group slot is changed, so familiarize yourself with the existing output groups associated with the input group being changed.

- To have security lights turn on when someone opens an exterior door at night (using a badge or using force), schedule an input group event to occur at sundown. Select the output group that operates the security lights. When an exterior door opens, this output group triggers the outdoor security lights.

NOTE When you add this new output group, make sure you don't overwrite something, such as the existing "door unlock" output group.

- To have an alarm sound when someone uses an invalid badge between the hours of 5 PM and 8 AM, schedule an input group event. Select the output group that operates a siren. When the reader detects an invalid badge, the reader's Invalid Input Group activates, the associated output group triggers, and associated output devices operate--in this case, a siren.

NOTE Remember to define the duration of the output using the **Outputs** form.

Output Groups Events

An output-group event can enable or disable a specific output group, and / or change its state to off or on for the period of time entered in the **Time** field of the **Output** form associated with this output group.

Use the **Outgroups Events** form (Figure 16-17) to define output group events for each mode. Defining an event requires you to select a mode, set the time of the event, select an output group, and specify one or more changes to the output group.

Setup

➤ **To create an output group event:**

1. Select **Schedule**, then **Outgroups Events**.
2. Enter a description for this event.
3. Set the time for this event to occur, by selecting a time, by selecting days of the week and typing a time, or by selecting **At Mode Start** or **At Mode End**.
4. Click the **Select Mode** button to display the **Modes** picklist. Select the desired mode for this event, then click **Ok**.
5. Click the **Select Output Group** button to display the **Outgroups** picklist. Select the output group that this event should control, then click **Ok**.
6. Specify whether the output group should be **Enabled**.
7. Specify whether the output state of this output group should be **On** or **Off**.
8. Click **Save**.
9. Click **New** to add another output group event, or **Quit** to exit the **Outgroups Events** form.
10. If the schedule does not work, query the mode status on the micro to see if it is in **Normal** mode.

The OutGroups Events Form

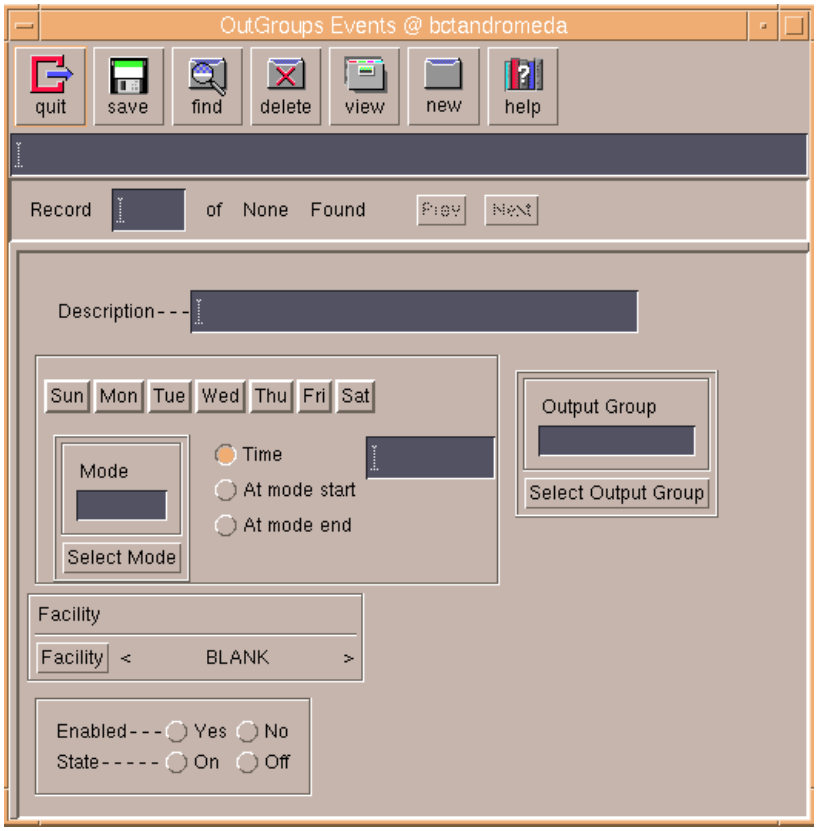


Figure 16-17. OutGroups Events Form

Description

Type an output group **Description** up to 30 alphanumeric characters long; for example, Parking Lot Lights On 18:00 M-F.

Mode

Select the mode in which the output group event will occur. An event will not take place, if it is not assigned to a mode and it will only occur in those modes to which it is assigned.

Days of the Week

If the event is a **Run Time** event, select the days of the week that the event will occur.

Time

If the event is a **Run Time** event, select the time of day that the event will start. Remember to schedule another event as the pair of this one.

For example, if something is activated every day at 8 AM, it must be deactivated at some time later that day.

At mode start

If this is a **Start/End** event, click **At mode start** if you want the event to activate at the start of the mode.

At mode end

If this is a **Start/End** event, click **At mode end** if you want the event to activate at the end of the mode.

Facility

Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

Output Group

Select the output group that will be triggered by the event.

Enabled

Output groups such as lights or perimeter cameras can be enabled to operate as required at scheduled times.

For example: Define output group events to have parking-lot lights enabled only during the night.

State

The outputs in the output group, such as emergency lights or sirens, can be turned on or off. A duration of zero turns on the output indefinitely.

For example: Define an output group event for Emergency mode that turns on sirens and emergency lights for the duration of Time;
or
Define output group events for normal mode to turn on lights late at night and turn them off in the morning.

Reporting

catsup

This is a command line tool that lists in a report format all the schedules that have been executed up to the current time and date by all micros. Use the following to get the report in a default format:

catsup /cas/log/sup.*mmdd*

where ***mm*** is the month and ***dd*** is the day. Example: **sup.0302**=March 2nd

To get a listing of all the options available, type at the command line:

catsup -help

Access/Secure Operations

Chapter 17

Overview

Devices, such as inputs, input groups or doors, normally exist in an **Access** state in which they are disabled or unlocked, or in a **Secure** state in which they are enabled or locked. These states are reflected on the appropriate device form.

Device	Secure State	Access State
Inputs	Enabled	Disabled
Input Groups	Enabled	Disabled
Doors	Locked	Unlocked

It may be desirable to change this state back and forth to allow for unscheduled conditions, such as heightened security levels or unscheduled peak access times. This feature can be used, in lieu of scheduling an event, to accommodate situations that require operator control. It allows state changes for multiple devices rather than applying the change to each device individually through the applicable form. For example, you may want all doors to be opened when the security guard arrives at his post rather than at a scheduled time.

This option will not appear unless it has been enabled through the **Permissions** screen.

Prerequisites

The following Picture Perfect forms are prerequisites:

Forms	Purpose
PRINTER ROUTINGS TERMINALS	To log activity to a printer and display on a console.
PERMISSION GROUPS PERMISSIONS OPERATORS	To enable the option and authorize operator use.
INPUT GROUPS INPUTS DOORS	To view, print and change states of a device.

What You Will Be Doing

This chapter shows you how to view, print and change states (Access / Secure) of inputs, input groups and doors.

Access/Secure Operations

Setup

➤ **To enable Access/Secure Operations:**

1. Select **Control**, then **Facility Profile**.

2. Click the **Find** button to locate the **Facility Profile** record to alter, or use the existing form to create a new **Facility Profile** record.

3. Click the button next to the **Menu** label and from the resulting **Forms** list, select **Access/Secure**.

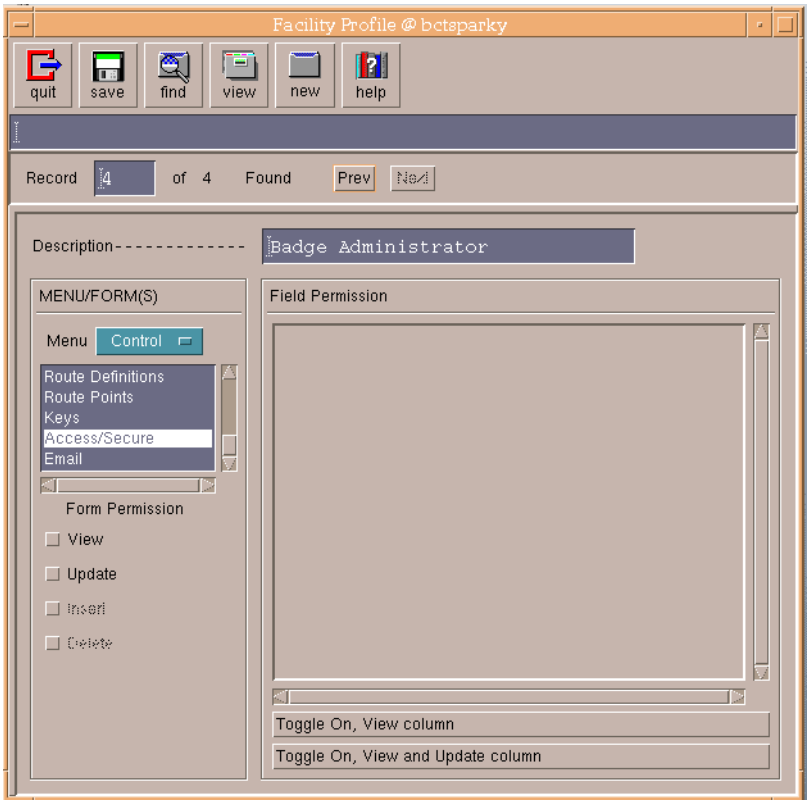


Figure 17-1. Facility Profile Window

4. Click **Update** to enable this option. If this option is not enabled, the **Access/Secure Operations** icon will not be available on the **Control** submenu.

5. Click **Save** to save your changes.

6. Click **Quit** to close the form.

➤ **To display the Access/Secure form**

1. Select **Control**, **Access/Secure Operations** to display the following pop-up menu:

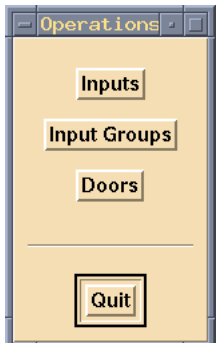


Figure 17-2. Operations Pop-Up Menu

2. Click the appropriate button (**Inputs**, **Input Groups**, or **Doors**). The applicable window will display (See "Sample Access / Secure Window" on page 17.5).

3. From one of the lists displayed, select the item whose state you wish to change by highlighting it. Multiple selections may be made. An item can be deselected by clicking on it a second time.

4. Click on the appropriate **Change State** arrow button.

   Result: A confirmation box will pop up.

5. Select **Yes** to continue or **No** to cancel the operation.

   Result: Yes will cause the system to update the database for the selected records, reflect the change in state on the appropriate form, inform the micros of the change, and refresh the two list boxes to reflect the new changes.

6. Click on the **Close** button.

7. Click **Quit** in the **Access/Secure Operations** pop-up menu to exit and close any open windows.

Sample Access/Secure Window

Below is an example of an **Access/Secure** window and an explanation of each component:

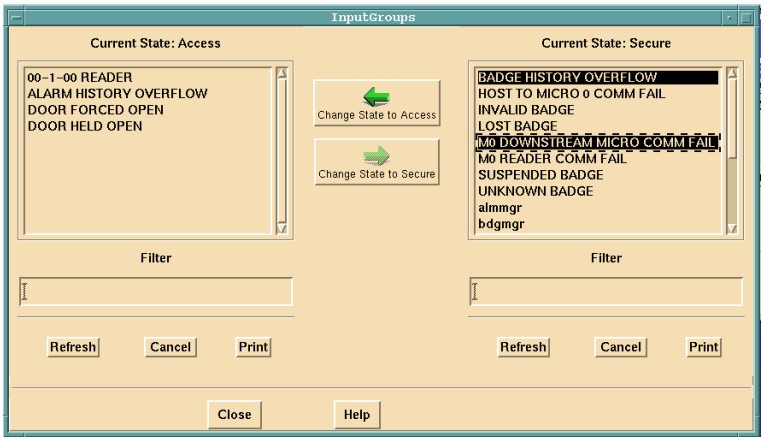


Figure 17-3. Access/Secure List Example - Input Groups

Current State: Access

This list box displays a list of the selected devices, such as **Input Groups**, that are in **Access** state (enabled; for example, door unlocked).

Current State: Secure

This list box displays a list of the selected devices, such as **Input Groups**, that are in **Secure** state (disabled; for example, door locked).

Change State to Access

This arrow button will be activated when a selection is made from the **Current State: Secure** list box. When clicked, a confirmation box will appear.

Change State to Secure

This arrow button will be activated when a selection is made from the **Current State: Access** list box. When clicked, a confirmation box will appear.

Filter

A pattern can be entered and used to restrict the items displayed.

Refresh

This button can be used whenever there is a change in the database; for example: after entering / changing a filter to rescan the database and list the updated items.

Cancel

Click this button to cancel any selections made.

Print

Click this button to send the list to the terminal's assigned printer.

Close

This button is used to close the appropriate window.

Help

Click this button to display online help about the use of the buttons on this screen.

Backup and Restore

Chapter 18

Overview

A backup of your access-control database should be performed periodically. The system allows you to back up the database to diskette, tape, or disk file. If your system has the optional packages installed, use separate diskettes or tapes to back up each database, because each backup initializes the diskette or tape.

Recommended: During initial system setup, perform a daily backup. Every day during initial setup, new inputs, outputs, and alarms are configured and new badge data is entered. Regular backups will protect this setup process.

The system stores badge transactions, alarm events, and operator activity in online history tables. When the online history table for an activity is almost full, the system displays an **Archive Alert** pop-up window with a message to archive the records of that particular table. If you prefer to archive data on a regular schedule, a **Force-Rollover** option can be used instead. This lets you archive a table even if it hasn't reached its threshold point.

NOTE An operator must remove the tape or diskette after the backup to prevent it from being overwritten.

What You Will Be Doing

This chapter shows you how to perform an archive, back up the database, restore the database, and recover the entire system.

Backup Options

Diskettes may be appropriate for installations with small databases. Another option for backing up large amounts of data storage is tape. While slow, because data is read and written sequentially, tape can hold 20-40GB (gigabytes) of storage. If your network configuration provides storage on a physical drive that is accessible using the network, this may also be an option, providing its storage capacity is large enough for your requirements. It is also a good idea to check with your network administrator before moving backup data across the network.

Performing an Archive

The system prompts you (using a pop-up window) to perform a specific archiving function for **Badge History**, **Alarm History**, or **Operator History** when the primary table for that history is full. At that time, the system takes the records stored in that primary history table and transfers them to a temporary history table. When an archive is performed for a particular history, it uses the information in its temporary table--that way, the primary table is free to start collecting new information right away.

If an archive is not performed before the primary table is filled again, the data in the temporary table will be overwritten, and the original archive data lost. So it is important to perform the indicated archive when the system notifies you.

Since the time needed to reach a history threshold varies with activity levels, it's hard to predict when a particular threshold will be reached. A **Force-Rollover** option exists, therefore, which allows you to archive data on a regular schedule, such as once a week. This task can then be incorporated into your normal backup procedure. The **Force-Rollover** option takes data in the primary table and transfers it to the temporary table even if the primary table is not full.

The **Force-Rollover** option will only be displayed on the **Backup** window if the data currently in the temporary table has already been archived. This prevents unarchived data from being destroyed when new data overwrites it. (This data will, however, be overwritten when the primary table becomes full.)

➤ **To review the primary tables:**

1. Click the middle mouse on the root window (background area of the screen) to display the **Programs** menu.

2. Select the option **History Dates**.

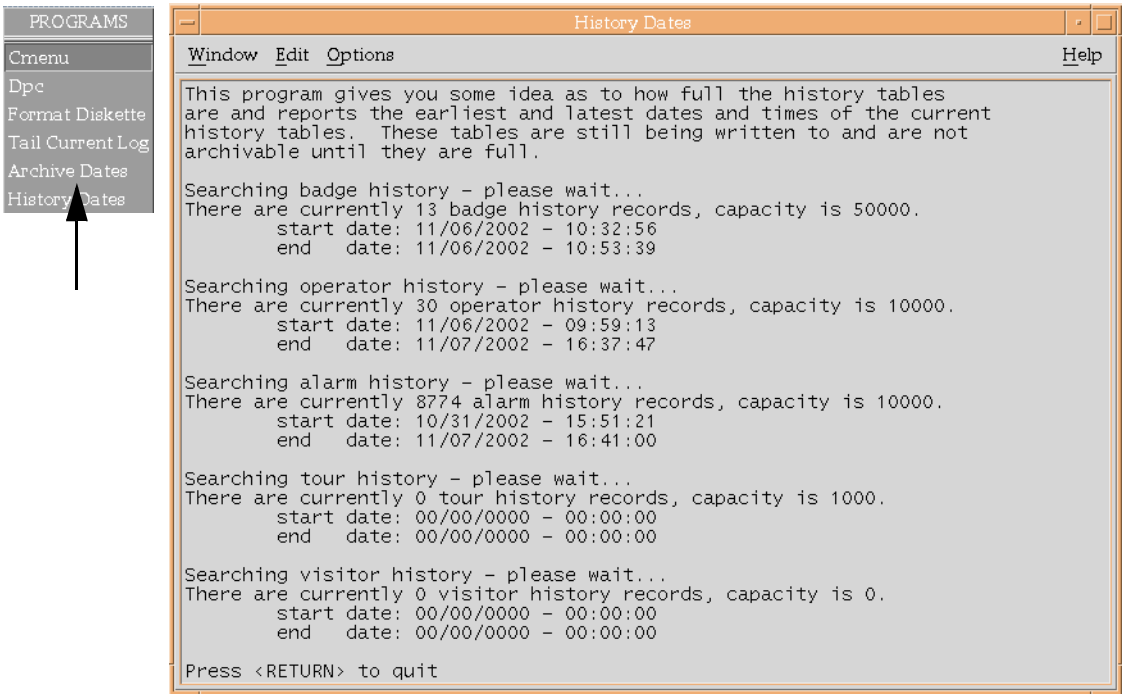

PROGRAMS
Cmenu
Dpc
Format Diskette
Tail Current Log
Archive Dates
History Dates
History Dates
Window Edit Options Help
This program gives you some idea as to how full the history tables
are and reports the earliest and latest dates and times of the current
history tables. These tables are still being written to and are not
archivable until they are full.
Searching badge history - please wait...
There are currently 13 badge history records, capacity is 50000.
start date: 11/06/2002 - 10:32:56
end date: 11/06/2002 - 10:53:39
Searching operator history - please wait...
There are currently 30 operator history records, capacity is 10000.
start date: 11/06/2002 - 09:59:13
end date: 11/07/2002 - 16:37:47
Searching alarm history - please wait...
There are currently 8774 alarm history records, capacity is 10000.
start date: 10/31/2002 - 15:51:21
end date: 11/07/2002 - 16:41:00
Searching tour history - please wait...
There are currently 0 tour history records, capacity is 1000.
start date: 00/00/0000 - 00:00:00
end date: 00/00/0000 - 00:00:00
Searching visitor history - please wait...
There are currently 0 visitor history records, capacity is 0.
start date: 00/00/0000 - 00:00:00
end date: 00/00/0000 - 00:00:00
Press <RETURN> to quit

Figure 18-1. History Dates Window

➤ **To review the temporary tables:**

1. Click the middle mouse on the root window (background area of the screen) to display the **Programs** menu.

2. Select the option **Archive Dates**.

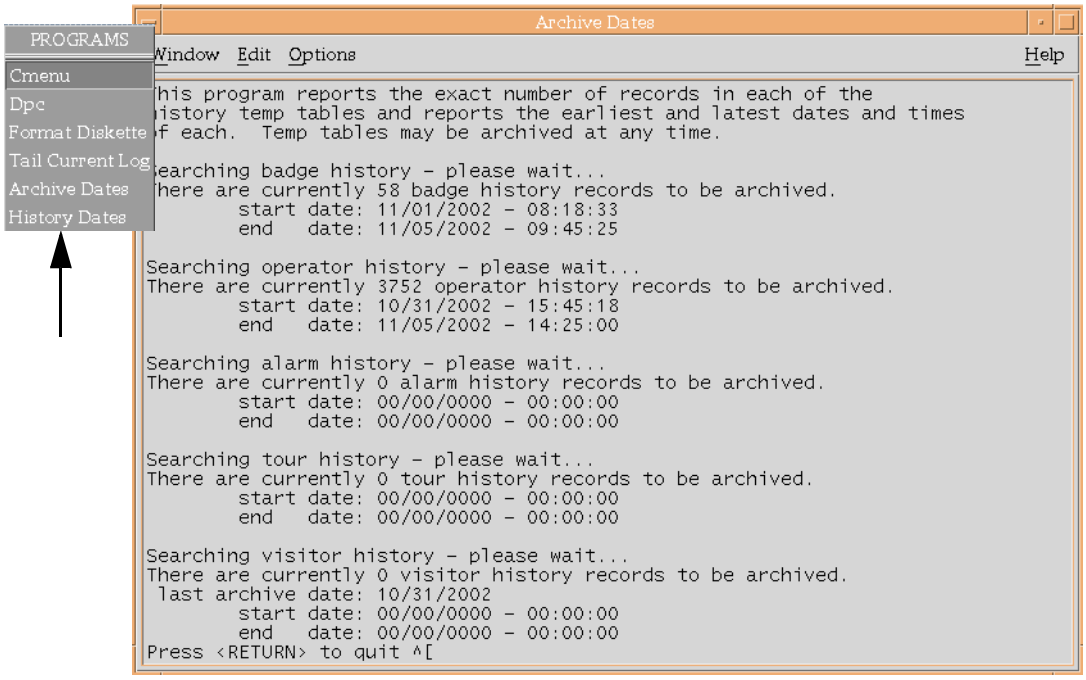

PROGRAMS
Cmenu
Dpc
Format Diskette
Tail Current Log
Archive Dates
History Dates
Archive Dates
Window Edit Options
Help
his program reports the exact number of records in each of the
istory temp tables and reports the earliest and latest dates and times
f each. Temp tables may be archived at any time.
earching badge history - please wait...
here are currently 58 badge history records to be archived.
start date: 11/01/2002 - 08:18:33
end date: 11/05/2002 - 09:45:25
Searching operator history - please wait...
There are currently 3752 operator history records to be archived.
start date: 10/31/2002 - 15:45:18
end date: 11/05/2002 - 14:25:00
Searching alarm history - please wait...
There are currently 0 alarm history records to be archived.
start date: 00/00/0000 - 00:00:00
end date: 00/00/0000 - 00:00:00
Searching tour history - please wait...
There are currently 0 tour history records to be archived.
start date: 00/00/0000 - 00:00:00
end date: 00/00/0000 - 00:00:00
Searching visitor history - please wait...
There are currently 0 visitor history records to be archived.
last archive date: 10/31/2002
start date: 00/00/0000 - 00:00:00
end date: 00/00/0000 - 00:00:00
Press <RETURN> to quit ^[

Figure 18-2. Archive Dates Window

➤ **To perform an Archive:**

1. Select **Control**, then **Backup**.
2. When the **Backup** window appears (Figure 18-3), select the **Archive** radio button to display the **Archive** options.
3. Select one of the history options: **Badge**, **Alarm**, or **Operator**.
4. If an archive of the data in the temporary table has already been performed, the **Force Rollover** option will be displayed beside that history option. Toggle this button **On** if you want to force a rollover of information and archive that data.
5. If you want to generate an onscreen verification report, leave the **Generate Verification Report** button **On**.
6. Use the appropriate radio button before you start a backup to **Diskette**, **Tape**, or **Disk File**. (If backing up to diskette, make sure you have formatted diskettes available before you start the backup.)

NOTE

When **Disk File** is selected, clicking the **Execute** button will display a list from which you can select the destination file for the backup/archive. See
See Appendix D - Advanced Configuration for detailed information on configuring this option.

7. Click **Execute** to start the archive.

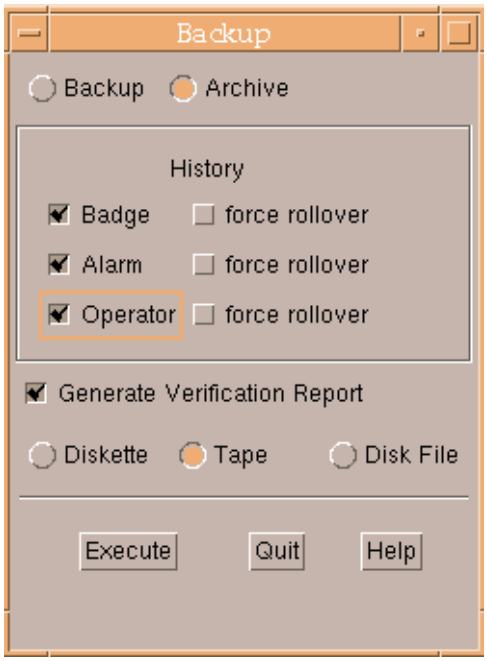


Figure 18-3. Archive Backup Window

Performing Backups

There are two methods of backing up your database:

- The **Backup** feature in Picture Perfect
- The command line option, **`cba`**

Using the Picture Perfect Backup Function

The backup function allows you to back up your access-control database (badge table, reader table, operator table, etc.) and the databases of any optional Picture Perfect packages you may have installed.

If backing up to diskette, make sure you have formatted diskettes available before you start the backup.

➤ **To perform a backup:**

1. Select **Control**, then **Backup**.
2. When the **Backup** window appears (Figure 18-4), select the **Backup** radio button to display the various tables buttons.
3. Select one or more of the tables options: **Badge**, **Base**, **History**, or an optional package.

4. If you want to see exactly which tables are included in your selection, you may click the **Show Tables** button. This displays the **Database Tables** window with a listing of all the tables in the database. The tables included in your selection will be toggled **On**.

CAUTION

Do not toggle any of the individual table buttons in the **Database Tables** window unless instructed to do so by your support representative.

5. If you want to generate an onscreen verification report, leave the **Generate Verification Report** checkbox selected.

6. Use the appropriate radio button to start a backup to **Diskette**, **Tape**, or **Disk File**. (Make sure you have formatted diskettes available before you start the backup.)

NOTE

When **Disk File** is selected, clicking the **Execute** button will display a list from which you can select the destination file for the backup/archive. See the Installation Guide for detailed information on configuring this option.

7. Click **Execute** to start the backup.

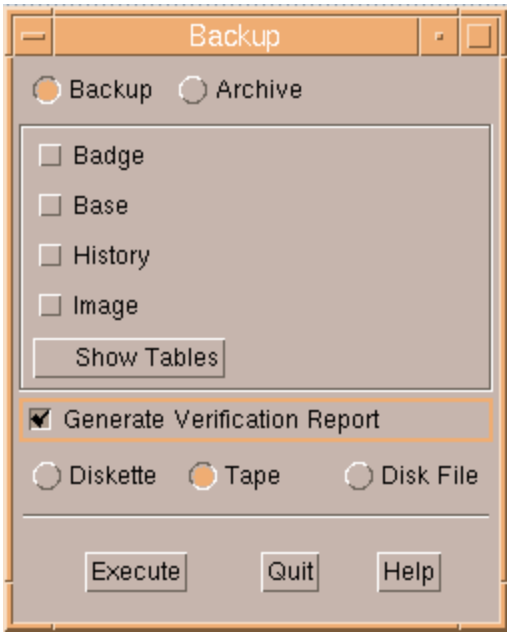


Figure 18-4. Table Backup Window

Using the Command Line Backup Option cba

Configuration File

The command line version of backup uses a configuration file **backup.cfg** located in **/cas/db/text**. This file contains the flat files to be backed up. You can edit this file if you have additional files you would like to back up.

The syntax of the contents of the backup.cfg file is:

```
package name            directory or file to back up
base:                   /cas/forms
base:                   /cas/lists
base:                   /home/install/.profile
```

Options

The **cba** command line options are:

```
-c            character mode
-b            backup
-a            archive
-r            force rollover on history (archive only)
-rt {#}       retry rollover {#} of times (default is 100)
-d {file}     write to the specified disk file
-t            tape - write to /dev/pptape
-f            floppy - write to /dev/fd0
-v            verify that data was written successfully
-np           do not prompt for tapes if specified with -c
-nb           run from netback
```

Tables

The following tables can be backed up (**b**) or archived (**a**):

```
-badge    ba  badge table / badge history
-base     b   basic database
-hist     ba  all three history tables
-image    b   badge photos and related files
-graph    b   alarm graphics (if installed)
-tour     b   guard tours  (if installed)
-thist    ba  tour history (if installed)
-visitor b    visitor tables (if installed)
-vhist    ba  visitor history (if installed)
-alarm     a  alarm history
-oper      a  operator history
```

Perform Backup

➤ **To launch the cba backup option:**

1. Open a Terminal window.

2. Type a command, including options; for example to backup and verify the base Picture Perfect package to a disk file, type:

```
cba -c -b -v -d /tmp/basebackup -base -badge Enter
```

Result: The **cba** backup option will back up the files contained in the **backup.cfg** file.

NOTE Be sure to include options when using the command line cba option. If you fail to do so (if you type **cba** Enter), the system will try to launch the Picture Perfect graphical **Backup** feature.

Scheduling Backups

The **Schedule Backup** feature allows you to schedule a system backup to pre-selected media. The backup will then run automatically at the day and time settings specified on the **Backup Events** form. The backup can go to either tape, diskette, or disk file and can include one or more of the following backup types: badge table, base system, history tables, and any optional packages, such as Alarm Graphics tables.

NOTE The scheduled backup will not span multiple diskettes or tapes, and there will be no prompt for inserting the backup media. Before the backup is to take place, an operator must make sure that the correct media is properly inserted.

All error messages and completion messages generated as a result of the scheduled backup process will be written to a log file in the **/cas/log** directory called **bak.mmdd** where **mmdd**= system date (example: **bak.0302**=March 2nd). You must check the **bak** log file for messages after the scheduled backup process has executed, since there are no pop-up window messages associated with this feature.

Archives of **Badge**, **Alarm**, or **Operator History** cannot be scheduled.

Refer to Figure 18-5 for the **Backup Events** form.

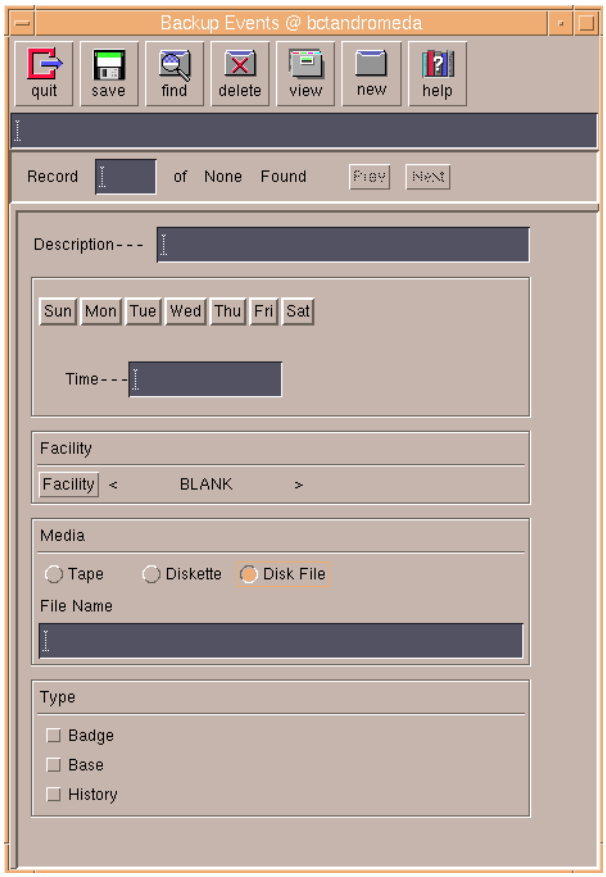


Figure 18-5. Backup Events Form

➤ **To schedule a System Backup:**

1. Select **Schedule**, then **Backup Events** to display the **Backup Events** form.

2. Type in the description of this backup.

3. Enter the time (according to the format on the **Control**/**Parameters** form) this report is to run, and select the days on which it is to run.

4. Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

5. Use the radio buttons to specify whether the backup media is **Tape**, **Diskette**, or **Disk File**.

6. Use the toggle buttons to select one or more of the backup types: **Badge**, **Base**, **History**, or any option shown on the form and then click **Save**.

NOTE

When the **Disk File** option is selected, the file name is required. If the file name does not specify the path, the default location for the file is the `/cas/log` directory. A scheduled backup event overwrites existing files of the same name.

Restoring the Database

There are two methods of restoring your database:

- The **Restore** feature in Picture Perfect
- The command line option, **`cbr`**

Using the Picture Perfect Restore Function

The **Restore** function allows you to restore the database tables from tape, diskette, or disk file.

NOTE

The **Restore** function does not overwrite existing data. To clear your tables, refer to your Technical Reference manual or contact your support representative.

Before you restore the database, perform a database initialization. For instructions, refer to your Technical Reference manual or contact your support representative. The Restore function does not restore regular files. Use the command line database restore option, **`cbr,`** or the database restore utility, **`restore.sh,`** to restore regular files.

➤ **To perform a restore:**

1. Select **Control**, then **Restore**.
2. On the **Restore** window (Figure 18-6), use the radio buttons to specify whether to **Restore From Diskette**, **Restore From Tape**, or **Restore from Disk File**.
3. Click **Ok**.
4. When the **Media** pop-up window appears, insert the tape or diskette.
5. Click **OK** to start the restore.

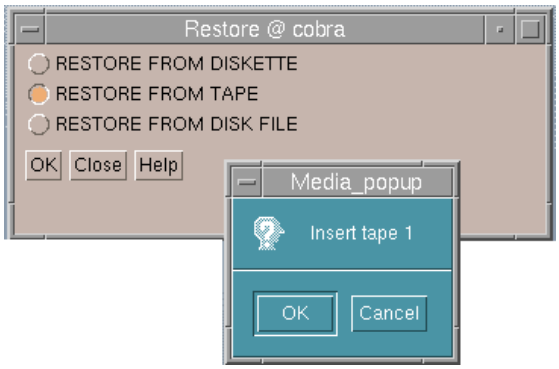


Figure 18-6. Restore Window with Media Pop-up

Using the Command Line Option cbr

Configuration File

The command line version of restore uses a configuration file **`restore.cfg`** located in **`/cas/db/text`**. This file contains the flat files to be restored. You can edit this file if you want to add or delete files to be restored.

The syntax of the contents of the restore.cfg file is:

/cas/forms
/cas/lists
/home/install/.profile

Options

The **`cbr`** command line options are:

```
-c  - use character-based interface
-a  - restore all tables
-d  - from disk file
-f  - from floppy
-o  - output file
-t  - from streaming tape
-v  - verify afterwards
```

Perform Restore

➤ **To launch the cbr restore option:**

1. Open a Terminal window.

2. Type a command, including options; for example to restore and verify the base Picture Perfect package from a disk file, type:

```
cbr -c -a -v -d /tmp/basebackup Enter
```

NOTE

Be sure to include options when using the command line cbr option. If you fail to do so (if you type **cbr** Enter), the system will try to launch the Picture Perfect graphical **Restore** feature.

Result: The **cbr** restore option will restore the files contained in the **restore.cfg** file. Messages similar to the following will display.

```
.
.
.
restoring 'regular files'...
```

After the database records are restored and if your backup included flat files, you will receive messages similar to the following:

```
This program edits the configuration file, /cas/db/text/
restore.cfg before running the backup or restore programs.

For backups, you must also precede each file or directory name
with a package name followed by a colon and a space (or tab).
This will cause the specified files to be backed up only when
the associated package is backed up.

For restores, DO NOT precede each file or directory name with a
package name, colon or space.  Simply supply the file or
directory you wish to be restored from the media.


P - Print Current List

A - Add Item to List
```

```
E - Edit Item on List

D - Delete Item from List

Q - Quit and Save File


Enter Function (P/A/E/D/Q): p
```

3. Type the letter **p** to print the list of files to be restored.

   Result: A list, similar to the following, of the files contained in the **restore.cfg** files will be displayed.

```
Current File List

1. /cas/forms/*
2. /cas/lists/*
3. /photo/photo/*
4. /photo/designs/*
```

4. If these are the files you wish to restore, press **Q** to quit and save the file. If you wish to edit the list, press **A**, **E**, or **D**, as appropriate. When you have completed your edits, press **Q** to quit and save the file.

   Result: Your flat files will be restored.

Recovering the Entire System

1. To recover the entire system, perform the **Installation** procedures. For the complete installation procedures for Picture Perfect and the operating system, refer to the appropriate Picture Perfect Installation Guide.

2. When you reach the **Database Restore** utility during installation, select option 3 (**Restore Customer's Database from Tape**), option 4 (**Restore Customer's Database from Diskette**), or option 5 (**Restore Customer's Database from Disk File**), depending on your media type, and reload your database backup rather than the minimum or sample database.

NOTES

History Reports

Chapter 19

Overview

The Picture Perfect system captures history information for alarms, badges, and operator activity. This information can then be manipulated into various reports that can be viewed on screen or sent to a printer.

Alarm History includes acknowledged alarms. Badge History includes access attempts by valid, invalid, lost, and suspended badges, plus Swipe and Show transactions on readers. Operator History includes database changes, logins, control outputs, alarm graphics, and Swipe-and-Show record changes to output state.

What You Will Be Doing

This chapter shows you how to control which activities go to history, how to view history, how to format reports, how to use selection criteria, how to save reports, how to print reports, and how to schedule reports.

Controlling Which Activities Go to History

The History Log is online history, and is one of the destinations specified by routing instructions used throughout the system. You can set up routing-control information to direct selected operator activity and badge activity to selected destinations (Printer, Monitor, or History Log). See “Routings” on page 4.21 of Chapter 4 - Initial Setup for details on this.

The routings that you define on the **Routings** form appear in the **Routings** picklist on the **Areas**, **Doors**, and **Alarms** forms. If the current routing on a form includes the History Log, the activities defined on that form are captured in history. If there is no current routing assigned, the activity routes to the default routing as defined on the **Parameters** form. If the default routing does not include the History Log in its setting, the activity will not be captured in history. The **Routings** picklist on the **Inputs** form is for diagnostics only.

The History Form

The **History** form is a workspace for specifying and displaying various history reports.

Select **Reports**, then **History**. The **Badge History - New Report** form (Figure 19-1) appears.

The menu bar on the **History** form has six pull-down menus (plus a **Help** menu). To display a menu, click on the menu name and hold down the mouse button. To select an option, drag the mouse pointer to the desired option and release the button. Use the **Help** menu for on-screen information about each of the features.

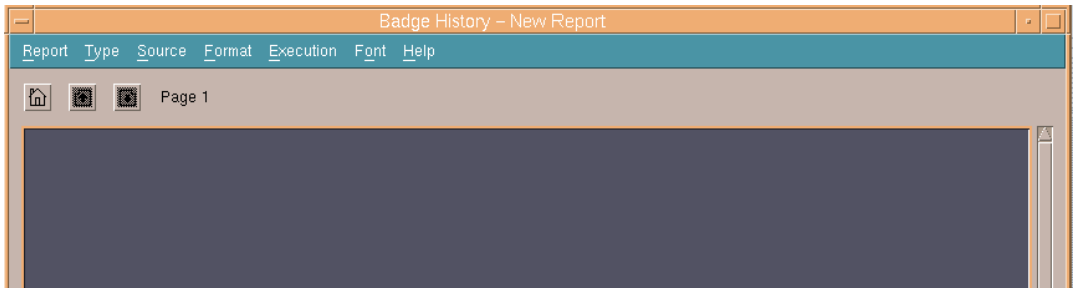


Figure 19-1. History Form

The next section explains the six pull-down menus and the three command buttons (beneath the menu bar).

NOTE

The phrase “current report” means the report that is currently displayed on your screen.

The Report Menu

The pull-down **Report** menu has seven selections. Each selection is explained below.

NOTE

On picklists, the **Ok** button applies the specified function to the report and closes the picklist window; other buttons, such as **Open**, **Save As**, and **Delete** apply their functions to the report, but leave the picklist window open.

New

Clears the form so you can create a new report. You are provided with the **Open Template** picklist from which you can open an existing report to use as a template. Select the desired report, then click **Open**. Clicking **Ok** without selecting a report creates a blank report.

Open

Displays the **Open Report** picklist (Figure 19-2) from which you can open a predefined report. Select the desired report, then click **Open** or **Ok**.

Figure 19-2. Open Report Picklist - History

Save

Saves the current report with the existing title and current changes.

Save As

Allows you to save the current report under a different name, with the original report still existing under the previous name. The **Save Report As** window (Figure 19-3) will appear. Type a new name for the current report, then click **Save As** or **Ok**.

Figure 19-3. Save Report As Window

Print

Allows you to print the entire report or a range of pages within that report. The **Print Options** window (Figure 19-4) will appear for specifications. When you are ready to print, click **Ok**.

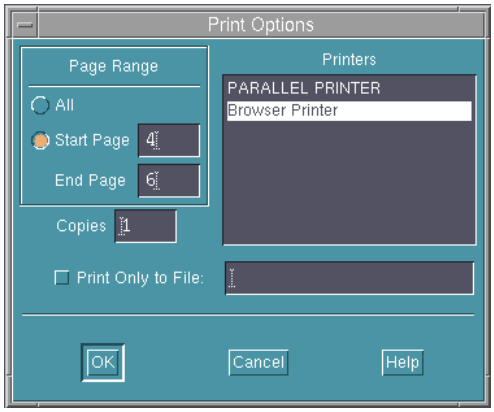


Figure 19-4. Print Options Window

Page Range
Select either **All** or a range. If printing a range, type the **Start Page** number and the **End Page** number.

Copies
Type the number of copies to be printed.

Print Only to File
Toggle this button **On** and type a file name if you want to save it as a file rather than send it to a printer. Use a full pathname, such as **`/tmp/badgerpt.0407`**.

Printers
Select the printer to which this report should be sent.

Delete

Displays the **Delete Report** picklist (Figure 19-5) so you can delete an existing report. Select the desired report, then click **Delete** or **Ok**.

Figure 19-5. Delete Report Picklist - History

Quit

Exits the **History** form.

The Type Menu

There are three basic selections (plus optional reports) in the **Type** menu. Select one of these to specify the type of history you want:

Alarm
Badge
Operator
(or optional)

The selection of history type is critical in using the **History** application, as it determines which reports are displayed on the **New** and **Open** picklists of the **Report** menu, which **Query** form appears using the **Format** menu, as well as other screens. This is the starting point for using this program.

The Source Menu

There are three selections in the **Source** menu. Select one of these to specify the data source of the history:

Data Base
Diskette
Tape

The Format Menu

The selections in the **Format** menu let you design a report to your specifications using one of several methods. You can also control the page design and include headers and footers using this menu.

Query

This option displays the **Query** window (Figure 19-6), which is used to designate specific selection criteria for a report. This is useful in limiting the search of data to a very narrow scope, such as badges used in a specific reader during a certain day, or **Invalid Floor** elevator access attempts.

NOTE

For more information on generating reports on floor access, see “Floor Tracking” on page 22.22.

The window consists of radio buttons, toggle buttons, text fields, and picklist buttons for various aspects of data you may wish to include in the report. When you have specified your data, click **Ok**.

Depending on the history type currently selected in the **Type** menu (alarm, badge, or operator), the **Query** window will vary. Use the **Help** button on each of the windows for information on the various fields.

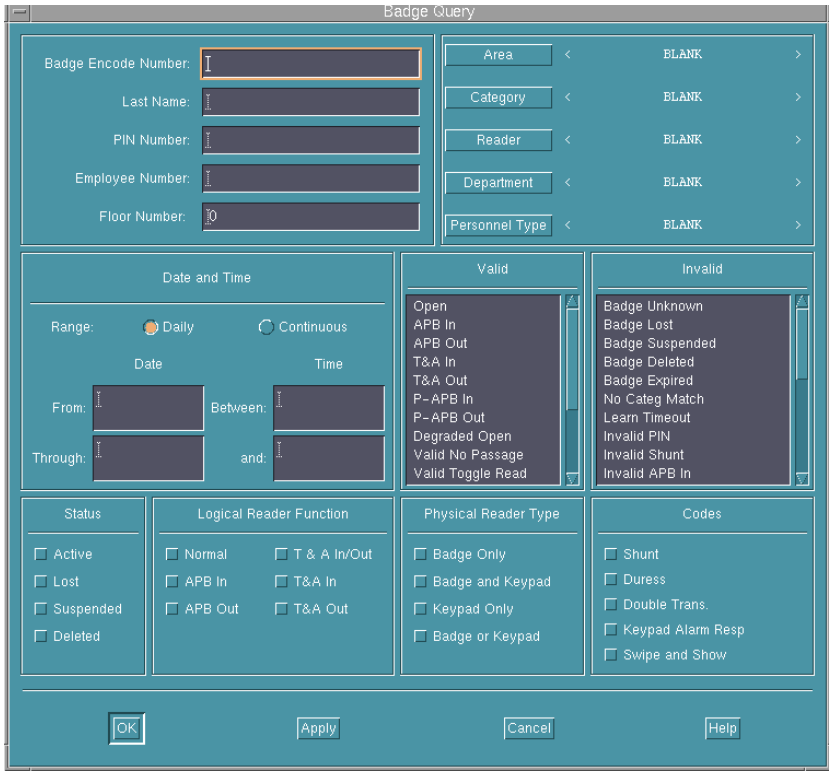


Figure 19-6. Badge Query Window

Column

This option displays the **Format Columns** window (Figure 19-7), which is used to designate specific columns (fields of information) to be included in a report. After the desired columns have been selected from a picklist for display in the report, you then specify which columns are to control the sorting order of the data found, and whether that should be done in ascending or descending order. You can also control the width of each column on the report.

When you have specified your report information, click **Ok**.

Depending on the history type currently selected in the **Type** menu (alarm, badge, or operator), the **All Columns** picklist of the **Columns** window will vary. Use the **Help** button on the window for additional information on the various fields.

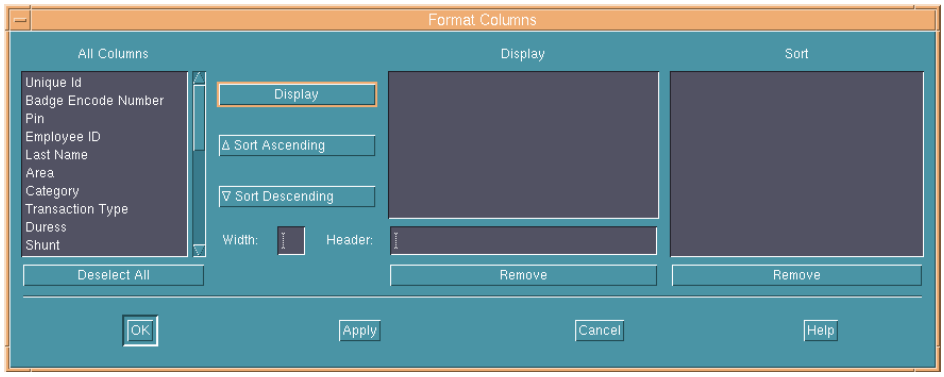


Figure 19-7. Format Columns Window

All Columns
This picklist displays all fields of information in the **History** table for the type (alarm, badge, or operator) of report being created. Select the desired columns one at a time, and move them into the **Display** list by clicking the **Display** button. Multiple selections can be made by holding the left mouse button down and dragging.

Deselect All
If one or more undesired columns were selected in the **All Columns** list, click **Deselect All** to clear them.

Display Button
After selecting one or more column names from the **All Columns** list, click this button to move them into the **Display** list.

Display List
The **Display** box displays the columns that have been selected for the report and controls the left-to-right order of their appearance. (The column listed at the top will be at the far left of the report, and the column listed at the bottom will be at the far right.)

Sort List
The **Sort** box displays the columns that will control the sorting order of the data. In the **All Columns** list, select the column that is to control the sorting order of the data, then click either the **Sort Ascending** or the **Sort Descending** button. That column will then be listed in the **Sort** list. (The sorting column does not have to be one of the displayed columns.) Repeat this procedure with another column if you want a secondary sort, a tertiary sort, etc. The order in which the columns are listed in this field determines the sort priority of each (the first listed is the primary sort, the second listed is the secondary sort, etc.).

Sort Ascending Button
Click this button to include a selected column on the **All Columns** list in the sort, with data listed in ascending order (such as A through Z).

Sort Descending Button
Click this button to include a selected column on the **All Columns** list in the sort, with data listed in descending order (such as Z through A).

Remove Buttons
Click this button to delete selected columns from the section above it.

Width/Header
These fields display the width and name of the column selected in the **Display** list. If you want to change the width of a column on the report, select that column in the **Display** list, then overtype the data in the **Width** field. If you want to change the name of a column on the report, select that column in the **Display** list, then overtype the data in the **Header** field.

Page

This option displays the **Format Page** window (Figure 19-8), which lets you apply headers, footers, and spacing commands to the current report, and control the use of detail and summary lines. After you have formatted your page, click **Ok**.

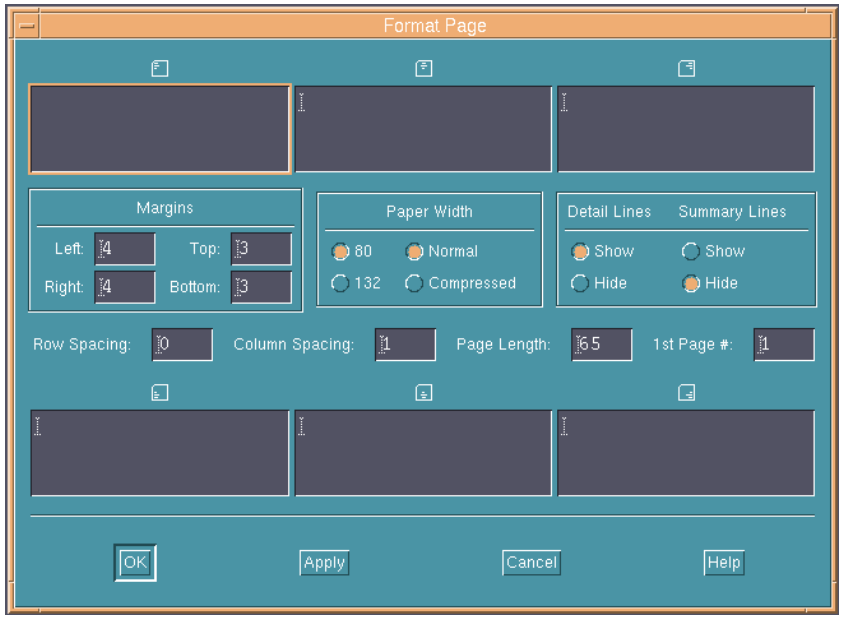


Figure 19-8. Format Page Window

Header Blocks
The three text blocks across the top of the window represent three different header sections on the report, as designated by the graphic

symbol above each. The first block is for flush-left text, the second is for centered text, and the third is for flush-right text. Type text in each block, or leave it blank. The header will appear on the report with the proper justification.

Footer Blocks
The three text blocks across the bottom of the window represent three different footer sections on the report, as designated by the graphic symbol above each. The first block is for flush-left text, the second is for centered text, and the third is for flush-right text. Type text in each block, or leave it blank. The footer will appear on the report with the proper justification.

Margins
Use the four text boxes in this area to specify the left, right, top, and bottom margin settings of the report. The numbers used for the left and right settings indicate number of characters, while the top and bottom settings indicate number of lines.

Paper Width
Use the radio buttons in this area to specify both paper width and compression of type. Select a paper width of either *80* or *132* characters (based on the printer). Select whether the type will be **Normal** or **Compressed**.

Detail Lines
The **Detail Lines** are the rows of data that are found for the report. Select whether the report should **Show** or **Hide** these lines. If you want the report condensed to only show the Summary Lines, set **Detail Lines** to **Hide** and **Summary Lines** to **Show**.

Summary Lines
The **Summary Lines** are printed before or after related information on the report. Select whether the report should **Show** or **Hide** these lines. If you want the report condensed to only show the Summary Lines, set **Summary Lines** to **Show** and **Detail Lines** to **Hide**.

NOTE

If both the **Detail Lines** and **Summary Lines** are set to **Hide**, the report will appear blank.

Row Spacing
This controls the spacing of lines between the rows of data. If you want the report single-spaced, set this to 0. If you want the report double-spaced, set this to 1.

Column Spacing
This controls the spacing between the columns of data. Set this to the number of blank characters you want to have dividing the columns.

Page Length
This field controls the number of lines allowed per page. Enter the desired number.

1st Page #
This controls the beginning page number of the report when used with the page-number variable command. Enter the desired number.

Summary

The **Format Summary** window (Figure 19-9) is only available if the history **Source** is set to **Database** and at least one sort field is specified in the **Format Column** window. It lets you select which sort fields to summarize and how they should be formatted. When you have completed this window, click **Ok**.

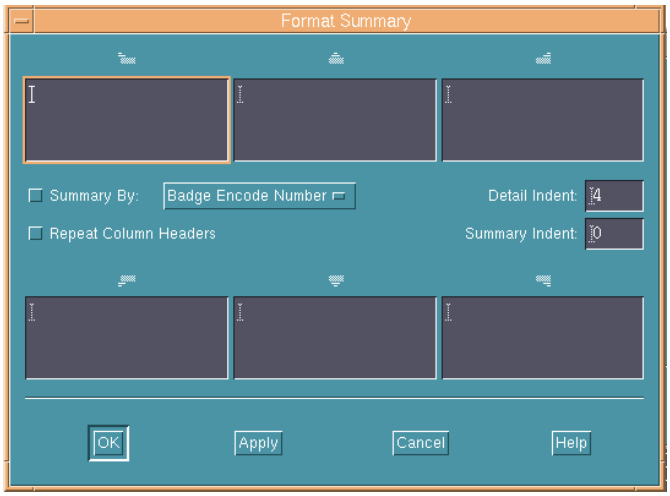


Figure 19-9. Format Summary Window

Text Blocks
The text blocks across the top and bottom of the window represent six different placements for summary text on the report relative to the detail lines, as designated by the graphic symbol above each. The three blocks across the top will place the summary text above the detail lines, with the first block using flush-left text, the second using centered text, and the third using flush-right text. The three blocks across the bottom will place the summary text below the detail lines, with the first block using flush-left text, the second using centered text, and the third using flush-right

text. Type text in each block, or leave it blank. The summary text will appear on the report with the proper justification.

Summary By
A toggle button is assigned to each sort column of the report (up to eight). Set this to **On** for each sort field that should have a summary created.

Repeat Column Headers
Toggle this button **On** if you want the column headers to be repeated just before the summary lines (this is for summary lines *above-detail* only).

Detail Indent
Specify the number of characters the detail lines should indent from the left margin of the report.

Summary Indent
Specify the number of characters the summary lines should indent from the left margin of the report. (Applies only to flush-left summary text.)

Variables

The **Variables** picklist (Figure 19-10) displays variable fields that can be pasted into the various text blocks of the **Format** windows, such as the header and footer fields. These variables automatically calculate and update specific information, such as page number, number of detail lines, date, and time.

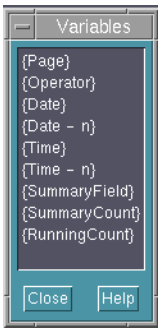


Figure 19-10. Variables Picklist

To paste a variable command into a text block, open the desired window and place the cursor in the desired text block. Open the **Variables** picklist and select the desired variable. The variable will appear in the text block where the cursor is located.

The variables can be combined with text. For example, to display “Page Number X” (where X = the running page number of the report), you would select the desired header or footer text block and type **`Page Number {Page}`**, pasting in the **`{Page}`** variable command. You may also type

(rather than paste) the variable commands if you know the exact context of the command you want. Remember to enclose it within braces: { }.

The Execution Menu

There are two selections in the **Execution** menu: **Automatic** or **Manual**. If you select **Automatic** execution, each time you click the **Apply** or **Ok** button, the report is run immediately and the changes are displayed. If you select **Manual** execution, the report is not run until you click the **Home** icon button.

Use the **Manual** selection if you prefer to view the report after selecting all the format and sort criteria.

The Font Menu

The **Font** menu has six Courier font sizes (8, 10, 12, 14, 18, and 24 points) to select from for the onscreen display.

The Home Icon Button

The **Home** icon button executes the query and includes any database changes made since the last query execution.

Example: At 10:00 AM, you load a daily badge report (formatted to include daily transactions between 08:00 and 17:00). The query automatically executes when you load the report and includes transactions between 08:00 and 10:00 AM.

You view the report using the page up / down buttons. Meanwhile, other transactions occur. These will not appear in your report until you click the **Home** button to re-execute the query and capture transactions that occurred after the last query execution.

Up/Down Buttons

The **Page Up** and **Page Down** buttons page forward or backward in the report window one page (65 lines default) at a time.

The **Page Up** and **Page Down** buttons are only available when they are not "grayed out". If the **Page Down** button is gray, this means you are currently looking at the last page (you're at the end). If the **Page Up** button is gray, this means you are currently looking at the first page (you're at the beginning).

Viewing a History Report

➤ **To view a History Report:**

1. Select **Reports**, then **History**. The **Badge History - New Report** form (Figure 19-1) appears.

2. Select the history type (**Alarm**, **Badge**, or **Operator**) from the radio button list on the pull-down **Type** menu. The current form displays the default selections for history type (badge) and for report function (new).

3. To define a new report, select **New** from the pull-down **Report** menu. To open an existing report, select **Open** from the **Report** menu.

NOTE

If you open an existing report, the report is already formatted, so you can skip the following formatting steps and just view the report. Or, you can reformat the report (using the **Format** menu options), apply the new format criteria, and then save the report under the existing name or a new name.

4. Select the history source (**Database**, **Diskette**, or **Tape**) from the radio button list on the pull-down **Source** menu.

   Use the **Format** forms to define and save selection criteria and layout. Use either the **Ok** or the **Apply** button (in each **Format** form) to save your changes. (The **Ok** button closes the window.)

5. Select the **Query** function from the **Format** menu and define the report parameters. The query date and time ranges can be set for either a daily range (time range each day) or a continuous range (24 hours a day). A daily range repeats each day of the selected date range and runs between a daily start and end time. A continuous range continues from the start date / time through the end date / time and runs 24 hours a day.

NOTE

Click either **Ok** or **Apply** to save your selection criteria.

To enter a variable such as {Date}, {Date-n}, {Time}, or {Time-n}, first position the cursor in the text entry field, then select a variable from the **Variables** picklist (**Format** menu), and highlight a variable from the picklist. The selected variable will appear in the text field.

6. Select the **Column** function from the **Format** menu and select column headers from a picklist. Each selection criterion in the **Query** form is available as a column header.

   Selected column headers appear in the **Display** box. To change the default

width and the header name for a column header, select (highlight) the column header and then use the text cursor to change the defaults in the **Width** and **Header** fields. To erase a selected column, first highlight it and then click **Remove**. Click either **Ok** or **Apply** to save your changes.

7. Optional: select up to eight sort criteria from the **Columns** picklist (**Format Columns**). First, highlight a selection in the **All Columns** picklist, then click **Sort Ascending** or **Sort Descending**, and your sort criterion appears in the **Sort** window. Specify ascending or descending order for each sort criterion that you select. For example, you can sort by descending date and time and by ascending last name. Click either **Ok** or **Apply** to save your sort criteria. A report **Summary** is available on reports that include one or more sort fields.

8. Select the **Page** function from the **Format** menu, type header/footer lines in three available page positions (left, center, and right), and select to show or hide summary and detail lines. To create a blank line between the headers and the detail lines, position the text cursor at the end of the last line and press Enter. The text cursor appears on the next line. Click either **Ok** or **Apply** to save your page format.

9. Optional: Select the **Summary** function from the **Format** menu, select one or more summary fields from an option menu (which includes all selected sort fields), and then define summary and detail-line indentions. Data may appear as nested summaries. You can select variables for summary lines.

NOTE

Select the **Variables** function (**Format** menu) to apply a variable to a summary line. First position the cursor on the summary line and then select a variable from the picklist. The `{Summary Count}` variable works only as a footer, not as a header. The `{Summary Field}` variable is the value of the selected summary field at each step.

10. Optional: Select the **Font** menu and select a Courier font size (8, 10, 12, 14, 18, or 24 points) for viewing the on-screen report. (This is not a print function.)

11. To save a new report, click **Save As** on the **Query** menu and type a report name. To save an existing report that you have reformatted, click **Save**. To save a reformatted report under a new name, click **Save As** and type the new name. (The old report still exists.)

To view the remainder of the page, use the scroll bar. To page forward, press the **Page Down** button. To re-execute the report and return to the first page, press the **Home** button.

Printing a History Report

➤ **To Print a History Report:**

1. Select **Reports**, then **History**. The **Badge History - New Report** form (Figure 19-1) appears.

2. Select the history type (**Alarm**, **Badge**, or **Operator**) from the radio button list on the pull-down **Type** menu. The current form displays the default selections for history type (badge) and for report function (new).

3. To print an existing report, select **Open** from the **Report** menu, select the report name from a picklist, and then select **Print**. To print a new report that you are currently viewing, select **Print**.

NOTE You can print a new report without saving the report.

To save time when printing a long report, set **Execution** to **Manual** before opening the report. This setting is also preferred when reading data from a tape.

Saving a History Report

To save a new report, select **Save As** on the **Report** menu and type a report name. To save an existing report that you have reformatted, click **Save**. To save a reformatted report under a new name, click **Save As** and type the new name (the old report still exists with its old name).

The **Save** functions on the **Report** menu do not save the selected format criteria unless the criteria is already applied using the **Ok** or **Apply** functions on each **Format** form.

Scheduling a History Report

If there are certain history reports that you want to run at specific times, you can use the scheduling feature to run these automatically. The scheduled report will follow the day and time settings specified on the **Report Events** form (Figure 19-11).

All error messages and completion messages generated as a result of the scheduled report process are written to a log file in the **`/cas/log`** directory called **`log.mmdd`** where **`mmdd`** = system date (example: **`log.0302`**=March 2nd). You must check the log file for messages after the scheduled report process has executed, since there are no pop-up window messages associated with this feature.

This scheduling feature can be used for both **History** and **SQL** reports, and they can be run together or separately. Each report type will have a prefix in the log file to indicate its execution. History reports will have a prefix of **`hist`**, and **SQL** reports will have a prefix of **`ppsql`**.

Setup

➤ **To schedule a History Report:**

1. Define your query and report format through the **History** form (Figure 19-1), and save it under the desired name.
2. Select **Schedule**, then **Report Events** to display the **Report Events** form.
3. Type the description of this report.
4. Enter the time this report is to run, and select the days on which it is to run.
5. Click the **History Report** button to display a picklist of history reports. Select the desired report, then click **Close**.

The Report Events Form

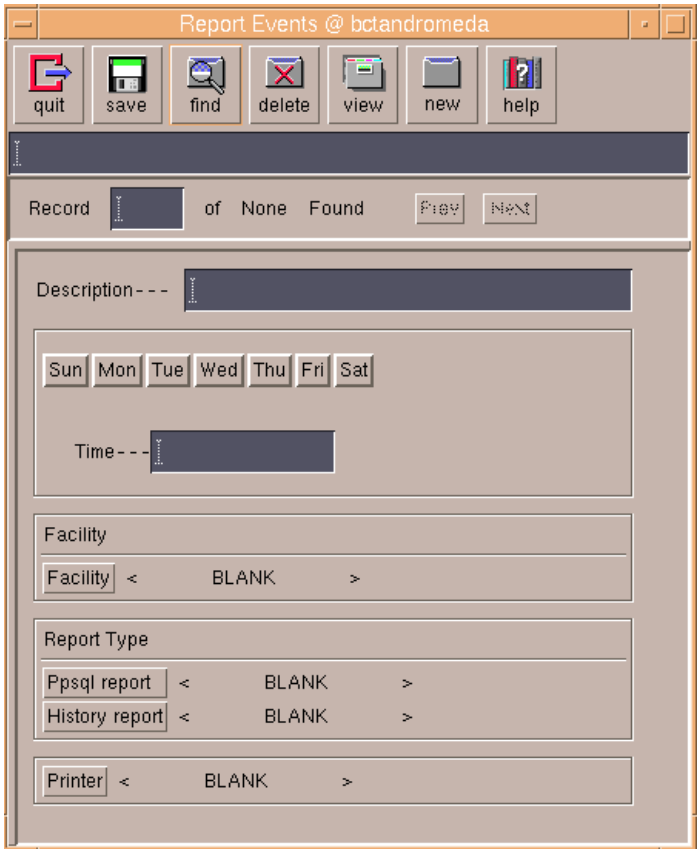


Figure 19-11. Report Events Form - History

Definition

Type the description of this report.

Time

Enter the time this report is to run, and select the days on which it is to run.

Facility

Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

Report Type

If **Enforcement of Report Permission** is enabled through the **Control/ Parameters** form, only those reports that the operator has permission to access will be displayed.

Ppsql Report
Displays a picklist of SQL reports.

History Report
Displays a picklist of history reports.

Printer

Click to display a picklist of printers.

SQL Reports

Chapter 20

Overview

This chapter introduces you to Structured Query Language (SQL) and describes the SQL form's pull-down menus, scrolling windows, pop-up picklists, and buttons.

This chapter shows you how to generate a typical badge report using the SQL form and SQL statements. To get acquainted with SQL statements, read "SQL Clauses" on page 20.14 in this chapter.

If you are not familiar with SQL, use an SQL reference book or select one of the pre-loaded reports. You can open one of the pre-loaded reports and examine the SQL statements so that you can build your own SQL statement for a report. Or, you can open an existing report, save it under a new title, and modify the SQL statement to build a new report.

Prerequisites

Use an SQL reference book to create your SQL statements. Use standard ANSI syntax:

```
SELECT column_name, column_name FROM table_name
```

The following Picture Perfect forms are prerequisites:

Forms	Purpose
PRINTER	To produce hard copy of report statements or report results.
PERMISSIONS	To give operator permission to create, update or delete a report from the database.

What You Will Be Doing

This chapter shows you how to use the SQL form to open, save, delete, and print report data selected and sorted using SQL statements, and how to schedule SQL reports.

Structured Query Language

The SQL form provides an interface to the online Picture Perfect database, so you can use ANSI standard SQL select statements to query the database

and generate reports. The SQL query function allows unlimited selection criteria and up to eight sort criteria, whereas the query function in the **History** form allows selected data to be sorted on a maximum of eight selection criteria. The relational database allows a query to join separate database tables into one report.

To optimize complex queries used for reporting and decision making, Picture Perfect uses IBM's Informix Dynamic Server, a Relational Database Management System (RDBMS) designed to run on a wide range of Unix-like operating systems in stand-alone or networked environments. Informix optimizes the processing of large databases that are shared by many concurrent users. Some advantages of Informix file management are:

- The operating system does not limit the number of tables used at one time. For example, the **SQL** form lets you select data from all Picture Perfect database tables for a single report.
- The size of a database table is not limited, except by disk size.

Use any SQL reference book to learn how to create SQL statements. This chapter shows you one example of a SELECT clause, a FROM clause, a WHERE clause, and an ORDER BY clause used to generate a typical badge report. See "Creating a Badge Report" on page 20.10.

The SQL Form

The SQL form (Figure 20-1) is a workspace for specifying and displaying various reports. Select **Reports**, then **SQL** to display the **SQL** form.

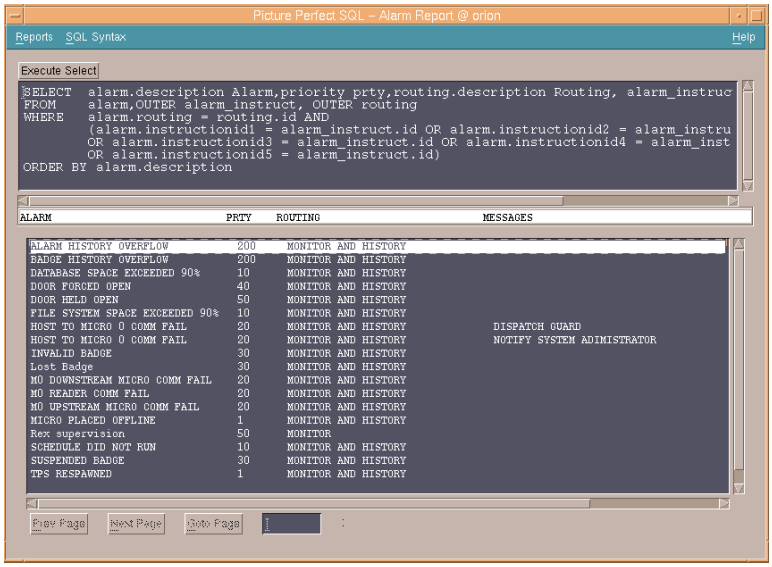

Picture Perfect SQL – Alarm Report @ orion
Reports
SQL Syntax
Help
Execute Select
SELECT alarm.description Alarm,priority prty,routing.description Routing, alarm_instruc
FROM alarm,OUTER alarm_instruct, OUTER routing
WHERE alarm.routing = routing.id AND
(alarm.instructionid1 = alarm_instruct.id OR alarm.instructionid2 = alarm_instru
OR alarm.instructionid3 = alarm_instruct.id OR alarm.instructionid4 = alarm_inst
OR alarm.instructionid5 = alarm_instruct.id)
ORDER BY alarm.description
ALARM PRTY ROUTING MESSAGES
ALARM HISTORY OVERFLOW 200 MONITOR AND HISTORY
BADGE HISTORY OVERFLOW 200 MONITOR AND HISTORY
DATABASE SPACE EXCEEDED 90% 10 MONITOR AND HISTORY
DOOR FORCED OPEN 40 MONITOR AND HISTORY
DOOR HELD OPEN 50 MONITOR AND HISTORY
FILE SYSTEM SPACE EXCEEDED 90% 10 MONITOR AND HISTORY
HOST TO MICRO 0 COMM FAIL 20 MONITOR AND HISTORY DISPATCH GUARD
HOST TO MICRO 0 COMM FAIL 20 MONITOR AND HISTORY NOTIFY SYSTEM ADIMISTRATOR
INVALID BADGE 30 MONITOR AND HISTORY
Lost Badge 30 MONITOR AND HISTORY
MO DOWNSTREAM MICRO COMM FAIL 20 MONITOR AND HISTORY
MO READER COMM FAIL 20 MONITOR AND HISTORY
MO UPSTREAM MICRO COMM FAIL 20 MONITOR AND HISTORY
MICRO PLACED OFFLINE 1 MONITOR AND HISTORY
Rex supervision 50 MONITOR
SCHEDULE DID NOT RUN 10 MONITOR AND HISTORY
SUSPENDED BADGE 30 MONITOR AND HISTORY
TPS RESPAWNED 1 MONITOR AND HISTORY
Prev Page
Next Page
Goto Page
1

Figure 20-1. SQL Form

At the top of the **SQL** form is a menu bar with pull-down menus for **Reports** and **SQL Syntax**, as well as a menu for on-screen **Help**. Below the menu bar is a scrolling text window where you type the SQL statements. Below that window is another scrolling window where the report will display if sent to the screen.

When you finish creating the SQL statements, you can either print the report immediately or you can view the report before you print it. To print the report, select **Print** from the pull-down **Reports** menu. To view the selected data in the report window, click the **Execute Select** button.

Execute Select

Click this button to generate the report, which will then appear in the scrolling window at the bottom of the form.

There is no limit on the amount of data returned by the select statement, and the bottom right of the window shows how many data records are in the report. When there are more than 1000 rows, it also shows you the current page and the total number of pages. If there are more than 1000 rows found, the first 1000 can be viewed using the scroll bars; press the **Next Page** button to see more. To view the previous 1000 rows, press **Prev Page**. Press the **Go to Page** button to access a particular page.

Report Permission Group

Click this button to display all of the defined report permission groups that the operator may associate to the report. The current report permission group that the report is assigned to will be displayed next to the button. These two items will be displayed only if enforcement of report permissions is enabled through the **Control**/**Parameters** form. Otherwise the report will be assigned to the special report permission group, **No Report Perm Group**.

NOTE

By default, all reports existing prior to Picture Perfect 1.7 are assigned the permission group **No Report Perm Group**. Only operators with **All Groups Allowed** report permission will be able to access these reports and assign new report permission groups to them.

To display a pull-down menu of the menu bar, left-click on the menu name and hold down the mouse button. To select an option, drag the mouse to the desired option and then release the button. The next section

explains the two pull-down menus
.

NOTE

The phrase “current report” means the report that is currently displayed on your screen.

The Reports Menu

The pull-down **Reports** menu has ten selections. Each selection is explained below.

New

Clears the form so you can create a new report.

Open

Displays the **Open Report** picklist (Figure 20-2) from which you can open a predefined report. Select the desired report, then click **Apply**. Click **Ok** to exit the window.

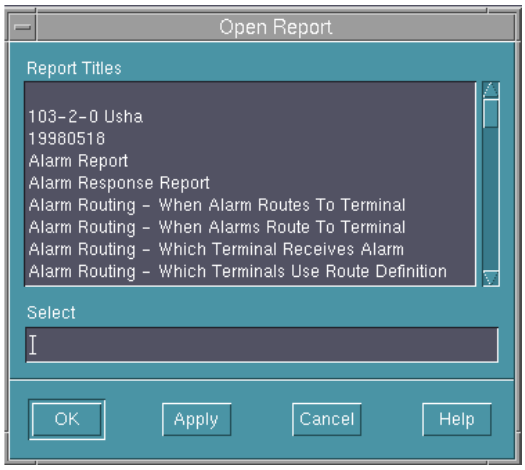


Figure 20-2. Open Report Picklist - SQL

NOTE

If report permissions are enabled, only the reports that the operator has access to will be displayed.

Save

Saves the current report with the existing title and current changes.

Save As

Allows you to save the current report under a different name, with the original report still existing under the previous name. The **Save Report Query As** window (Figure 20-3) will appear. Type a new name for the current report, then click **Ok** to save it and exit the window.

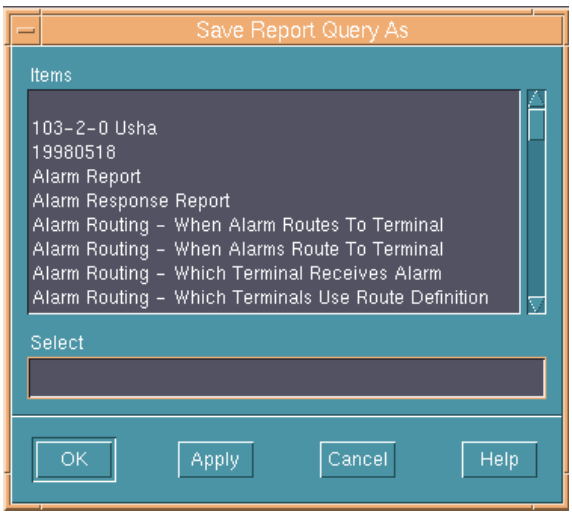


Figure 20-3. Save Report Query As Window

Delete

Displays the **Delete Report** picklist (Figure 20-4) so you can delete an existing report. Select the desired report, then click **Delete**. Click **Ok** to exit the window. This option appears only if you have operator permission to delete.

NOTE

If report permissions are enabled, only the reports that the operator has access to will be displayed.

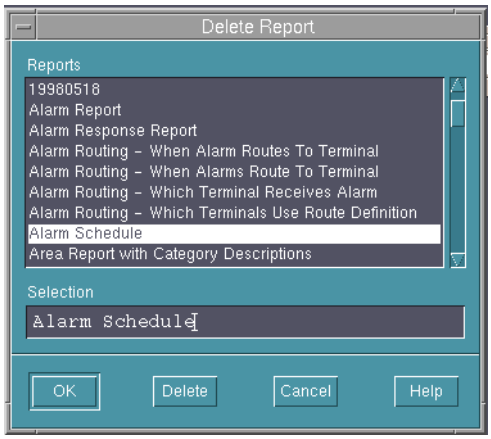


Figure 20-4. Delete Report Picklist - SQL

Page Setup

Displays the **Page Setup** window (Figure 20-5) to specify a unique title and an optional header and / or footer. If you want to save this report, a title is required. The optional header prints at the top right; the footer prints in front of the page number at the bottom. Click **Ok**.

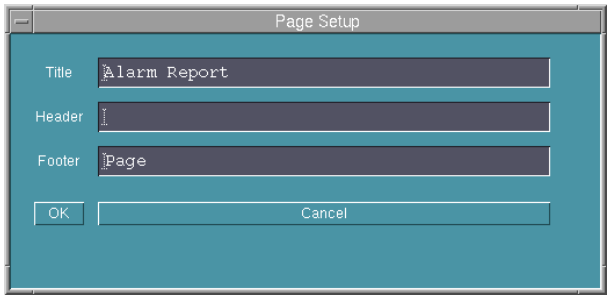


Figure 20-5. Page Setup Window - SQL

Print

Allows you to print the entire report. The **Print Report** window (Figure 20-6) will appear for specifications. When you are ready to print, click **Print**. To view the report before you print it, click **Execute Select** on the SQL window.

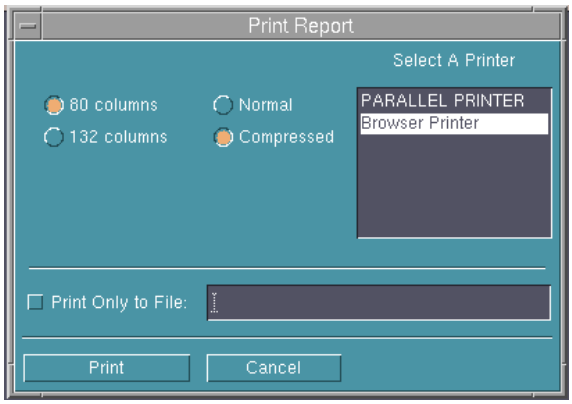


Figure 20-6. Print Report Window

Paper Width

Use the radio buttons in this area to specify both paper width and type compression. Select a paper width of either 80 or 132 characters (based on the printer). Select whether the type will be normal or compressed.

Select A Printer
Select the printer to which this report should be sent.

Print Only to File
Toggle this button **On** and type a file name if you want to save it as a file rather than send it to a printer. Use a full pathname, such as `/tmp/readers.0407`.

Print SQL

Allows you to print only the SQL statement that currently appears in the **SQL** window. The **Print SQL Statement** window (which looks just like the **Print Report** window) will appear for specifications. When you are ready to print, click **Print**.

Paper Width
Use the radio buttons in this area to specify both paper width and type compression. Select a paper width of either 80 or 132 characters (based on the printer). Select whether the type will be normal or compressed.

Select A Printer
Select the printer to which this report should be sent.

Print Only to File
Toggle this button **On** and type a file name if you want to save it as a file rather than send it to a printer. Use a full pathname, such as `/tmp/foo.sql`

Quit

Exits the **SQL** form.

The SQL Syntax Menu

This pull-down menu is used to build SQL query statements by selecting and applying SQL names, database table names, and column names inside the **SQL** window. The pull-down **SQL Syntax** menu has three selections.

SQL Names

This option displays the **SQL Names** picklist of SQL reserve words (Figure 20-7), relational operators, and logical operators which you select and apply to an SQL statement. When you select a name and click **Apply**, the name appears wherever your cursor is located in the **SQL** window.

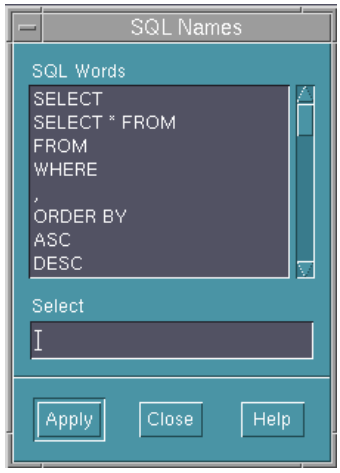


Figure 20-7. SQL Names Picklist

Table Names

This option displays the **Table Names** picklist (Figure 20-8). Select and apply table names to SQL statements after FROM. This picklist includes all the table names in the Picture Perfect database, and each contains different types of data that you may want to include in your report. When you select a table name and click **Apply**, the name appears wherever your cursor is located in the **SQL** window.

Column Names

When you select a table name from the **Table Names** picklist and then click the **Columns** button, the **Column Names** picklist (Figure 20-8)

appears with all the column names included in that database table. When you select a column name and click **Apply**, the name appears wherever your cursor is located in the **SQL** window.

For details on using the **Columns** picklist to create an SQL select statement, see “SQL Clauses” on page 20.14.

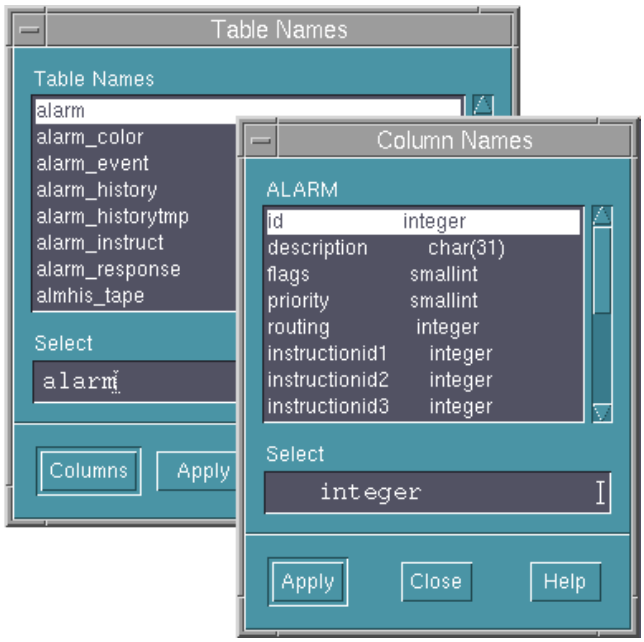


Figure 20-8. Table Names and Column Names Picklists

Using a Pre-loaded Report

Instead of building a custom report, you can execute a “pre-loaded” report that is already defined. Figure 20-9 shows an example of a pre-loaded SQL report.

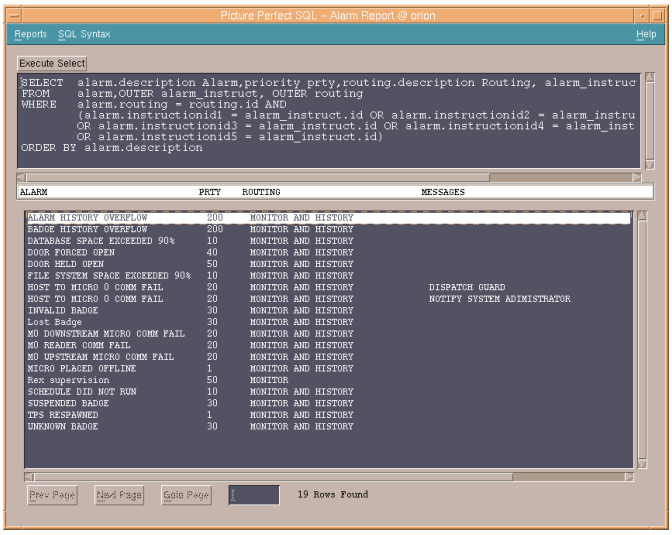

Picture Perfect SQL – Alarm Report @ orion
Reports SQL Syntax Help
Execute Select
SELECT alarm.description Alarm,priority prty,routing.description Routing, alarm_instruc
FROM alarm,OUTER alarm_instruct, OUTER routing
WHERE alarm.routing = routing.id AND
(alarm.instructionid1 = alarm_instruct.id OR alarm.instructionid2 = alarm_instru
OR alarm.instructionid3 = alarm_instruct.id OR alarm.instructionid4 = alarm_inst
OR alarm.instructionid5 = alarm_instruct.id)
ORDER BY alarm.description
ALARM PRTY ROUTING MESSAGES
ALARM HISTORY OVERFLOW 200 MONITOR AND HISTORY
BADGE HISTORY OVERFLOW 200 MONITOR AND HISTORY
DATABASE SPACE EXCEEDED 90% 10 MONITOR AND HISTORY
DOOR FORCED OPEN 40 MONITOR AND HISTORY
DOOR HELD OPEN 50 MONITOR AND HISTORY
FILE SYSTEM SPACE EXCEEDED 90% 10 MONITOR AND HISTORY
HOST TO MICRO 0 COMM FAIL 20 MONITOR AND HISTORY DISPATCH GUARD
HOST TO MICRO 0 COMM FAIL 20 MONITOR AND HISTORY NOTIFY SYSTEM ADIMISTRATOR
INVALID BADGE 30 MONITOR AND HISTORY
Lost Badge 30 MONITOR AND HISTORY
MO DOWNSTREAM MICRO COMM FAIL 20 MONITOR AND HISTORY
MO READER COMM FAIL 20 MONITOR AND HISTORY
MO UPSTREAM MICRO COMM FAIL 20 MONITOR AND HISTORY
MICRO PLACED OFFLINE 1 MONITOR AND HISTORY
Rex supervision 50 MONITOR
SCHEDULE DID NOT RUN 10 MONITOR AND HISTORY
SUSPENDED BADGE 30 MONITOR AND HISTORY
TPS RESPAWNED 1 MONITOR AND HISTORY
UNKNOWN BADGE 30 MONITOR AND HISTORY
Prev Page Next Page Goto Page 1 19 Rows Found

Figure 20-9. Example of a Pre-Loaded SQL Report

➤ **To execute a pre-loaded report:**

1. Select **Reports**, then **SQL**.

2. Select **Open** from the pull-down **Reports** menu.

3. Select the desired report title in the **Open Report** picklist, then click **Ok**.

4. Click **Execute Select** to execute the query statement that appears in the **SQL** window and display the data on screen.

5. To print the report, select **Print** from the **Reports** menu, choose a printer from the picklist, then click **Ok** to print the report.

Creating a Badge Report

Although the following directions are specific to the badge table, a user who is unfamiliar with how to write SQL statements can learn how to use the **SQL** form to write a typical SQL select statement, save the report, and print the report.

See “The SQL Syntax Menu” on page 20.8 for information on displaying the Table Names and Columns picklists, and how to apply these to an SQL statement.

➤ **To generate a badge report:**

1. Select **Reports**, then **SQL**.

2. Select **New** from the pull-down **Reports** menu to clear the **SQL** form.

3. Enter the following SQL reserved words in the **SQL** window to form the beginning of each SQL clause. Use all caps to differentiate the reserved words from the rest of the clause. Only the SELECT clause and the FROM clause are required. WHERE and ORDER BY are optional.

   ```
   SELECT
   FROM
   WHERE
   ORDER BY
   ```

   Instead of typing these names, you can use **SQL Names** (on the **SQL Syntax** menu) for a picklist from which you can select and apply words to the SQL statement window.

   For a brief explanation of each of the SQL reserved words, read "SQL Clauses" on page 20.14.

4. Select and apply column names from the badge table and department table to create the following SELECT clause. Follow the three steps listed below. When joining multiple tables, use table indicators for column names. In the following SQL statement, "department." indicates that description comes from the department table. The statement does not include table indicators for column names from the badge table.

   ```
   SELECT last_name, first_name,
   department.description, issue_date
   ```

   - Select badge from the **Table Names** picklist, then click the **Columns** button. Select and apply last_name, first_name, issue_date from the **Badge Column Names** picklist, and type a comma after each column name except the last name in the clause.
   - Select department from the **Table Names** picklist, then click the **Columns** button. Select and apply description from the **Department Column Names** picklist, inserting it in front of issue_date with a comma after it.
   - Type **`department.`** in front of **description** to indicate the database table, because you are joining multiple tables. Column names selected from the first table (listed under FROM) do not

require a table indicator unless an identical column name appears in a table that you are joining.

When you click **Apply** in the **Columns** picklist, the selected name appears after the text cursor in the **SQL** window. Type a comma after the applied column name before you select and apply another column name; do not type a comma after the last column name in the clause. One or more spaces inserted before and after the comma do not affect the SQL statement.

5. The FROM clause specifies the tables where the selected column names are located. Type a comma to separate the table names. Select and apply badge and department from the **Table Names** picklist to create the following FROM clause:

   ```
   FROM badge, department
   ```

6. The WHERE clause limits the search of data to certain criteria within the specified tables and columns. Select and apply the appropriate table and column names from the picklists to create the following WHERE clause:

   ```
   WHERE badge.dept = department.id AND
   department.description = "Test Department"
   ```

   This WHERE clause retrieves only that badge data belonging to the Test Department.

   The WHERE clause sets conditions on the select statement and uses logical and relational operators to limit the range of data. See “Logical Operators” on page 20.16 and “Relational Operators” on page 20.17 for information on using operators (such as the equal sign =, the quote sign ", the connector AND) in an SQL statement.

7. The ORDER BY clause specifies how the report sorts and sequences the selected data. Select and apply column names from the **Department Column Names** picklist to create the following ORDER BY clause:

   ```
   ORDER BY last_name
   ```

   This report sorts the rows by last name. Ascending alphabetical order is the default. To specify descending, use DESC, a reserve SQL name.

NOTE

SQL syntax does not accept DESC as an abbreviation for DESCRIPTION because it is one of the reserve SQL names. Remember this rule when you are customizing the column headings for the report title bar, next.

8. To customize the column headings, modify the SELECT clause in the **SQL** window. Before you change the headings, your SELECT clause is:

   ```
   SELECT last_name, first_name,
   department.description, issue_date
   ```

   This SELECT statement makes the following headings in the report title bar:

   ```
   LAST_NAME   FIRST_NAME  DESCRIPTION   ISSUE_DATE
   ```

   To change a column heading, insert a space and the new column name (no spaces) after the SQL name. Use an underscore instead of a space between words; for example, type **`Dept_Description`** after **`description`**.

   ```
   SELECT last_name, first_name,
   department.description Dept_Description, issue_date
   ```

   Click **Execute Select**. The new heading appears in the report title bar, and the selected data appears under the corresponding column headings:

   ```
   LAST_NAME   FIRST_NAME  DEPT_DESCRIPTIONISSUE_DATE
   ```

9. Select **Save As** from the pull-down **Reports** menu, type the name of the report, and click **Ok**.

SQL Clauses

In an SQL select statement, only the SELECT clause and the FROM clause are required. The other clauses are optional.

SQL is case sensitive. For example, if you specify %Door%, the query finds anything with the word Door in initial caps, but does not find the word DOOR in all caps. To include both:

```
WHERE description = "%Door%" OR "%DOOR%"
```

The SQL database stores information in tables. A table is a collection of information organized into columns and rows. Each table contains one or more columns. A column contains one specific type of information, such as last_name. Each row contains all the data about one of the records the table describes. A row contains one or more columns. In your SQL select statement, the SELECT clause limits the columns and the WHERE clause limits the rows.

You can create direct relationships between tables when you query a database to generate a report. The report displays data from several different tables as if the data belongs to a single table.

See “Logical Operators” on page 20.16 and “Relational Operators” on page 20.17 for information on describing relations between two values.

SELECT

Use the SELECT clause to find data from selected columns in a table. The report retrieves columns of data and lists the data under each column heading in the report. The sequence of column names in the SELECT clause determines the sequence of column headings on the report title bar.

FROM

Use the FROM clause to name the tables where the selected data is located. You can include (join) multiple database tables.

For example, the following (unfinished) SQL select statement retrieves data from the category, badge, and department tables. Notice that each column name in the SELECT clause has a table indicator. If there is more than one table, identify each column name with the table name, since identical column names that belong to different tables cause an ambiguous error.

```
SELECT badge.last_name, category.description,
department.description FROM badge, department, category
```

The above SQL statement is unfinished because it requires a WHERE clause. The WHERE clause is discussed next.

NOTE

When selecting columns with the same name from multiple tables, make sure to specify the display label. For example:

SELECT reader.description reader, area.description area FROM reader, area

WHERE

Use the WHERE clause to set conditions on the select statement so that the query finds only selected (not all) rows in a table. The WHERE clause describes acceptable values for one or more columns. Use relational operators after the WHERE keyword, followed by search conditions or descriptions of the rows you want to find. See "Relational Operators" on page 20.17.

When your search conditions include a column name, a relational operator, and a value, enclose character values in quotation marks.

For example, the following SQL select statement retrieves reader descriptions from the reader table that match only the *Cafeteria Reader* description:

```
SELECT description FROM reader WHERE
description = "Cafeteria Reader"
```

ORDER BY

Use the ORDER BY clause to sort the ROWS FOUND (data records returned). The report can sort by any column name; however, it is faster to order by columns that are indexed, such as last_name and description.

If the SQL statement does not specify the sorting order, Informix-Sql creates an index in ascending order: that is: A to Z for character fields; low to high for number and money fields; from earlier to later in time and date fields; and from smallest time span to largest time span for interval fields.

For example, the following SQL select statement retrieves data from the reader table that matches all reader descriptions, which appear in ascending alphabetical order.

```
SELECT description FROM reader ORDER BY description
```

LIKE

Use LIKE after a column name to specify a value or pattern that data must match in order to be found.

Characters typically used in a LIKE string are:

`%` A percent character matches zero or more characters.

_ An underscore character matches any single character.

The following SQL select statement retrieves a list of reader descriptions from the reader table where the reader description starts with the characters *Lob* and ends with zero or more unspecified characters.

```
SELECT description FROM reader WHERE description LIKE "Lob%"
```

The following SQL select statement retrieves a list of reader descriptions from the reader table where the reader description contains the word *Door* or *DOOR* anywhere in the description.

```
SELECT description FROM reader WHERE description LIKE "%Door%"
OR "%DOOR%"
```

Logical Operators

Use AND, OR, and NOT to connect one or more search conditions that create a comparison condition.

AND

Use AND to retrieve data that matches both of the values connected by AND.

The following SQL comparison statement retrieves each reader described as *Engineering Reader* and also has a set interval time of less than 5 seconds.

SELECT description FROM reader WHERE description = "Engineering Reader" AND Interval_Time < 5

OR

Use OR to retrieve data that matches either one of the values connected by OR.

The following SQL comparison statement retrieves reader descriptions that match either *Lobby Reader* or *Cafeteria Reader*:

```
SELECT description FROM reader WHERE description = “Lobby
Reader” OR description = “Cafeteria Reader”
```

NOT IN

Use NOT IN to screen out data that you do not want in the report.

For example, the following SQL comparison statement retrieves all reader descriptions except those described as *Engineering* or *Antipassback*.

```
SELECT description FROM reader WHERE description NOT IN
("Engineering", "Antipassback Reader")
```

Relational Operators

Relational operators describe a relationship between two values. Use the following characters as relational operators in a WHERE clause:

`=`	Equal to
`< >`	Not equal to
`!=`	Not equal to
`>`	Greater than
`<`	Less than
`>=`	Greater than or equal to
`<=`	Less than or equal to

NOTE Do not use the "pipe" symbol (|) in an SQL statement.

For example, the following SQL select statement retrieves data for employees with last names that start with the letter A or above and also start with letters below G; in other words, last names that start with the letters A through F:

```
SELECT last_name, employee, FROM badge WHERE last_name >= "A"
AND last_name < "G"
```

Table 20-1: Data Type Relational Operators

Data Type	Greater Than (>) Means	Less Than (<) Means
DATE	Later in date	Earlier in date
TIME	Later in time	Earlier in time
INTERVAL	Longer span of time	Shorter span of time
CHAR	Later in the alphabet	Earlier in the alphabet

SQL Variables

Variables may be embedded directly into the SQL syntax by enclosing the variable inside brackets { }. It is up to the operator to put double quotes outside the variable as needed for character fields. The variable will be detected when the operator clicks the **Execute Select** button, and the **Variable** window will pop up. When the operator fills in the desired value and clicks **Ok**, the report is executed. The value is then substituted in place of the variable. SQL supports a maximum of ten variables in the **SQL** select statement. If there are no variables detected, the **Report Variables** window will not pop up.

Figure 20-10 shows the SQL syntax for embedded variables.

NOTE

Multiple words with spaces for substitution variables cannot be supported for column descriptions. SQL leaves it up to the operator to make the decision regarding the choice of variables and their textual descriptions.

The **Schedule Reports** feature will not support variables. An audit routine that detects variables in the **Schedule Reports** form prevents reports from being scheduled if they contain variables.

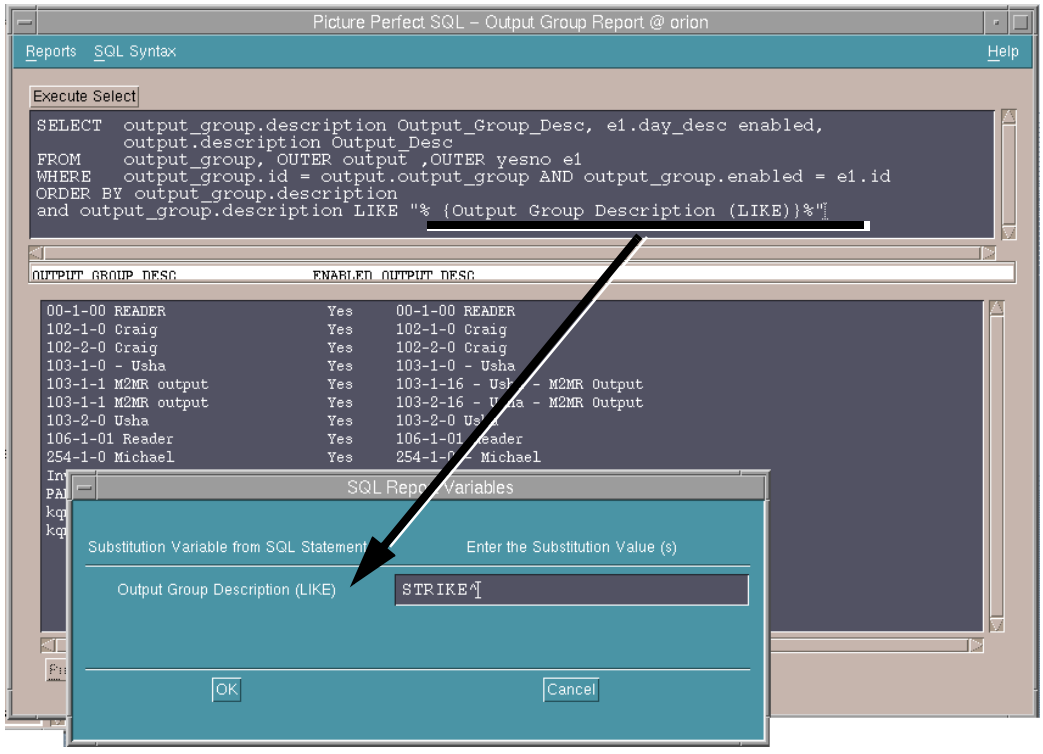

Picture Perfect SQL – Output Group Report @ orion
Reports
SQL Syntax
Help
Execute Select
SELECT output_group.description Output_Group_Desc, e1.day_desc enabled,
output.description Output_Desc
FROM output_group, OUTER output ,OUTER yesno e1
WHERE output_group.id = output.output_group AND output_group.enabled = e1.id
ORDER BY output_group.description
and output_group.description LIKE "% {Output Group Description (LIKE)}%"
OUTPUT_GROUP_DESC
ENABLED
OUTPUT_DESC
00-1-00 READER Yes 00-1-00 READER
102-1-0 Craig Yes 102-1-0 Craig
102-2-0 Craig Yes 102-2-0 Craig
103-1-0 - Usha Yes 103-1-0 - Usha
103-1-1 M2MR output Yes 103-1-16 - Usha - M2MR Output
103-1-1 M2MR output Yes 103-2-16 - Usha - M2MR Output
103-2-0 Usha Yes 103-2-0 Usha
106-1-01 Reader Yes 106-1-01 Reader
254-1-0 Michael Yes 254-1-0 - Michael
SQL Report Variables
Substitution Variable from SQL Statement
Enter the Substitution Value (s)
Output Group Description (LIKE)
STRIKE^
OK
Cancel

Figure 20-10. SQL Syntax for Embedded Variables

Break Variables

A break causes SQL to perform some action such as printing a blank line or performing a page eject. There are two variables that can be used to activate this feature. They should be placed at the end of the SQL Select statement.

LINEBREAK

The syntax is as follows:

LINEBREAK <column number in the select statement>

This causes a break, which is a blank line, to be printed each time there is a change in the value of the column identified by the <column number in the select statement>. You should always use ORDER BY <column number in the select statement> before issuing a linebreak. This will make the linebreaks occur at meaningful places. Figure 20-11 shows an example of a linebreak.

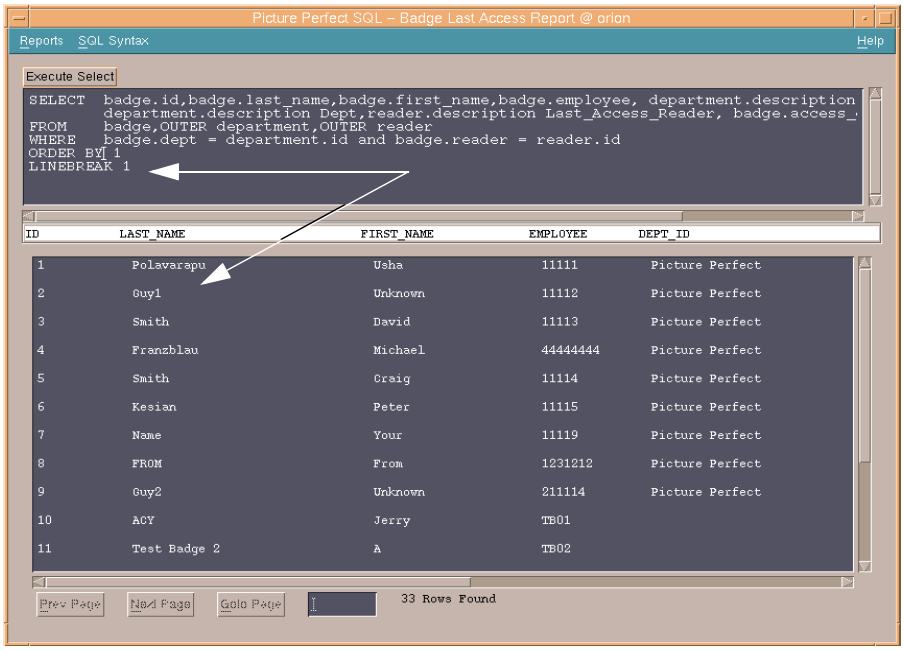

Picture Perfect SQL – Badge Last Access Report @ orion
Reports SQL Syntax Help
Execute Select
SELECT badge.id,badge.last_name,badge.first_name,badge.employee, department.description
department.description Dept,reader.description Last_Access_Reader, badge.access_
FROM badge,OUTER department,OUTER reader
WHERE badge.dept = department.id and badge.reader = reader.id
ORDER BY 1
LINEBREAK 1
ID LAST_NAME FIRST_NAME EMPLOYEE DEPT_ID
1 Polavarapu Usha 11111 Picture Perfect
2 Guy1 Unknown 11112 Picture Perfect
3 Smith David 11113 Picture Perfect
4 Franzblau Michael 44444444 Picture Perfect
5 Smith Craig 11114 Picture Perfect
6 Kesian Peter 11115 Picture Perfect
7 Name Your 11119 Picture Perfect
8 FROM From 1231212 Picture Perfect
9 Guy2 Unknown 211114 Picture Perfect
10 ACY Jerry TB01
11 Test Badge 2 A TB02
Prev Page Next Page Goto Page 1 33 Rows Found

Figure 20-11. Example of Linebreak

PAGEBREAK

The syntax is as follows:

PAGEBREAK **<column number in the select statement>**

This causes a page break, which is a page eject, to be issued each time there is a change in the value of the column identified by the <column number in the select statement>. You should always use ORDER BY <column number in the select statement> before issuing a pagebreak. This will make the pagebreaks occur at meaningful places. Figure 20-12 shows an example of a pagebreak.

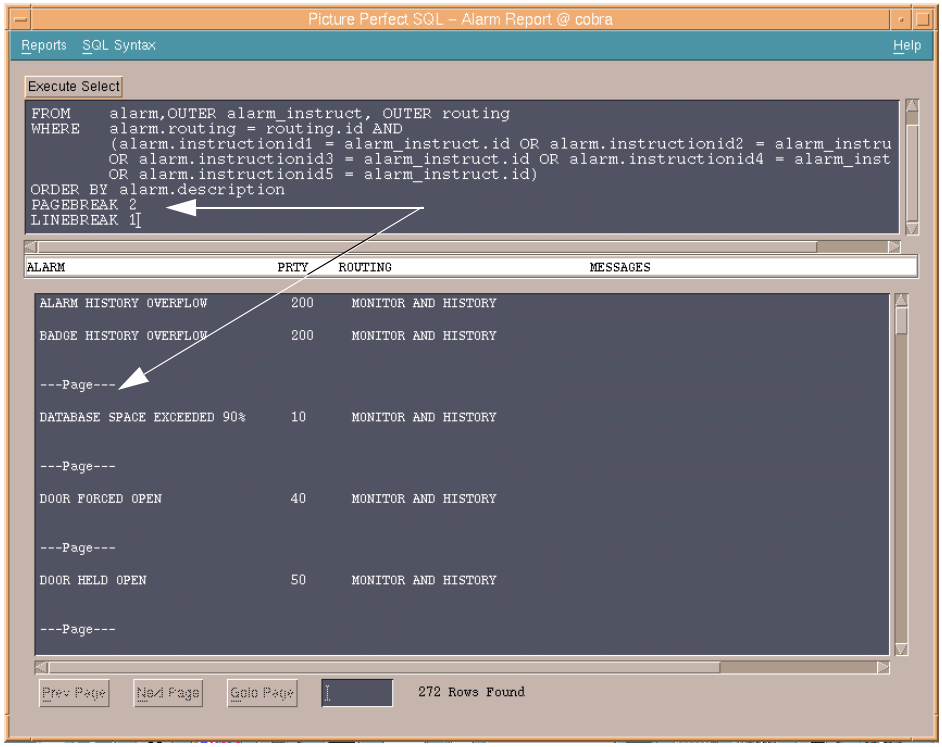


Figure 20-12. Example of Pagebreak

Using Pagebreak <column number> within SQL to the X-Window

This will simulate a page eject by printing

data.....

---page---

data.....

within the SQL X Window list.

Using Pagebreak <column number> within SQL to the printer

This will issue a full page eject when there is a change in the value of the column.

Badge Table Values

The badge table contains status and antipassback values represented by numbers (Table 20-2). The report data for these values appears in numbers, not text, in the report window.

Table 20-2: Badge Table Values

Value	Badge Status	Value	Antipassback Status
1	Permanent	1	Neutral
2	Temporary	2	In
		3	Out
		4	Privileged

Flags Column Values

In a database table, each column name with a name flag has a different meaning based on the value of the Flags column (Table 20-3). The report

data for these meanings appear in numbers, not text, in the report window.

Table 20-3: Flags Column Values

Table	Flag Column Value	Meaning
Alarm	0x01 0x02 0x04 0x08 0x10 0x20 0x40	Monitor the Alarm Alarm Online Ignore Schedule Changes Auto Reset of Outputs Manual Reset of Outputs Duration Reset of Outputs Immediate Reset of Input
Area	0x01 0x02 0x04 0x08 0x10 0x20	Online Area Enabled Enable Shunting Inhibit Schedule Changes APB Enforcement - Passive Two Man Rule
Door	0x01 0x02 0x04 0x08 0x10 0x20 0x40	Unlock Door Schedule Inhibit Sensing Enabled Monitoring Enabled Exit Button Enabled Pre-Alarm Enabled Keypad Alarm Response Enabled
Inputs	0x01 0x02 0x04 0x10 0x20 0x40	Normally Closed Input Enabled Elevator input Notify on Any State Change Notify Only when Off to On Notify Only when On to Off
Input Group	0x00 0x01 0x02 0x04 0x08 0x10	Trigger on any Input Trigger on all Inputs Enable Input Group Ground Condition Action Short Condition Action Broadcast Input State Changes

Table 20-3: Flags Column Values (Continued)

Table	Flag Column Value	Meaning
Output	0x01 0x02 0x04 0x08	Normally Open Enable Output Reset On Duration Reset On Input
Reader	0x01 0x02 0x04 0x08 0x10 0x20 0x40	Reader Online Enable Reader Enable Shunting Inhibit Schedule Changes Toggle Reader Limited Usage Elevator Reader

Scheduling an SQL Report

If there are certain SQL reports that you want to run at specific times, you can use the scheduling feature to run these automatically. The scheduled report will follow the day and time settings specified on the **Report Events** form (Figure 20-13).

NOTE A report that contains variables cannot be scheduled.

All error messages and completion messages generated as a result of the scheduled report process will be written to a log file in the **`/cas/log`** directory called **`log.mmdd`** where **`mmdd`** = system date (example: **`log.0302`**=March 2nd). You must check the log file for messages after the scheduled report process has executed, since there are no pop-up window messages associated with this feature.

This scheduling feature can be used for both **History** and **SQL** reports, and they can be run together or separately. Each report type will have a prefix in the log file to indicate its execution. **History** reports will have a prefix of **`hist`**, and **SQL** reports will have a prefix of **`ppsql`**.

Setup

➤ **To schedule an SQL Report:**

1. Define your report through the **SQL** form, and save it under the desired name.

2. Select **Schedule**, then **Report Events** to display the **Report Events** form.

3. Type the description of this report.

4. Enter the time this report is to run, and select the days on which it is to run.

5. Click the **Ppsql** button to display a picklist of SQL Reports. If **Enforcement of Report Permission** is enabled through the **Control**/ **Parameters** form, only those reports that the operator has permission to access will be displayed. Select the desired report, then click **Close**.

NOTE

A History report may also be selected to run at the same time and to the same printer.

6. Click the **Printer** button to display a picklist of printers. Select the printer where this report should print, then click **Close**. (Remember to consider the width specifications of the report when choosing a printer.)

7. Click **Save**.

The History Report Form

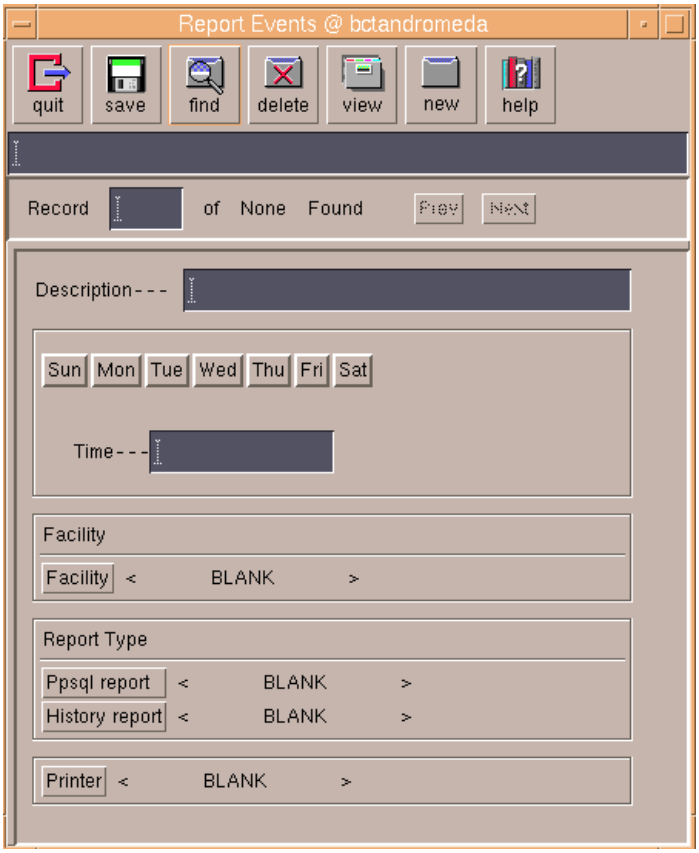


Figure 20-13. Report Events Form - History

Definition

Type the description of this report.

Time

Enter the time this report is to run, and select the days on which it is to run.

Facility

Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

Report Type

If **Enforcement of Report Permission** is enabled through the **Control/ Parameters** form, only those reports that the operator has permission to access will be displayed.

Ppsql Report
Displays a picklist of SQL reports.

History Report
Displays a picklist of history reports.

Printer

Click to display a picklist of printers.

Two Man Rule and Modified Two Man Rule

Chapter 21

Overview

Some high security areas, such as banks, may require that a minimum of two people occupy an area. Picture Perfect has the ability to control occupancy in an area by placing the area in **Two Man Rule** (2MR) or **Modified Two Man Rule** (M2MR) mode and then monitoring the count of badge holders that enter and exit the area. This type of area control can be set up through the **Areas** form or an area event can be scheduled for a specific time through the **Area Events** form.

The standard Two Man Rule (2MR), when enabled, requires that at least two authorized badge holders occupy a controlled space at the same time. The Modified Two Man Rule (M2MR), when enabled, further restricts access to controlled areas based on specific M2MR category types. See Table 21-1, "Badge Transactions for Occupancy Counting and Two Man Rule Features at the end of this chapter.

Prerequisites

The following Picture Perfect forms are prerequisites:

Forms	Purpose
PERMISSIONS	To assign Occupancy Control Permission
READERS	To set up the area's readers
DOORS	To set up the area's doors
AREAS	• To enable Occupancy Counting • To select the type of Two Man Rule enforcement to be used • (M2MR only) To assign an M2MR category to the area.
CATEGORIES (M2MR only)	To define M2MR Category Types
BADGES (M2MR only)	To assign M2MR Category Types

Occupancy Control

Picture Perfect allows the number of persons in a controlled space to be monitored by enabling **Occupancy Control** through the **Areas** form. This option is used when the number of people in an area must be controlled, for example fire code enforcement regulations or when **Two Man Rule** is enforced. The occupancy count is set to zero and Picture Perfect updates the occupancy count when a valid entry or exit to/from the area occurs.

When using **Occupancy Control** with the **Two Man Rule** feature, the following restrictions apply:

- **Occupancy Count** must be enabled and the count must be zero in order to enable **Two Man Rule**.
- If **Two Man Rule** is enabled, **Occupancy Count** cannot be disabled. An error message will display and you will not be allowed to save the record.
- If **Standard Two Man Rule** or **Modified Two Man Rule** is enabled and the occupancy count is greater than zero, **Two Man Rule** can be disabled, but you cannot switch to another **Two Man Rule** state. For example, if the area is set up as **2MR** and the occupancy count is 2, you cannot change the area to **M2MR with Door Control**. Instead you must disable **2MR**, reset the occupancy count to zero, and then enable **M2MR with Door Control**.

NOTE

Areas with **Occupancy Counting** enabled cannot span micros. All readers and doors must be physically connected to the same micro.

How to set up Occupancy Control

➤ **To set up the area readers:**

1. From the **Main** menu, select **Devices**, **Readers**.
2. From the toolbar, click on **Find** to locate the reader record you wish to set up.
3. Under **Logical Reader Function**, enable the appropriate radio button: **APB In**, **APB Out**, **T&A In**, or **T&A Out**.

NOTE

In an area with **Occupancy Control** enabled:

- All readers in the area must be assigned one of these logical functions: **APB In**, **APB Out**, **T&A In**, or **T&A Out**.
- **APB** readers must be set to **Global**. **Timed APB** is not allowed.
- The logical reader function **T&A In/Out** is NOT allowed for any reader.

4. Under **Set Micro**, verify that all readers in the area are assigned to the same micro.
5. Under **Reader Control**, **Number of Badges**, verify that all readers are set to **Single**.
6. Save and exit the **Readers** form.

➤ **To set up the area doors:**

NOTE

The door sensor input and the door output must be physically connected to the same micro.

1. From the **Main** menu, select **Devices**, **Doors**.
2. From the toolbar, click on **Find** the door record you wish to set up.
3. Under **Inputs**, click on **Door Sensor**.
4. Select the appropriate input from the list displayed.
5. Save and exit the **Doors** form.

➤ **To enable Occupancy Counting for the Area:**

NOTE In order to perform this function, you must have **Occupancy Control** permission.

1. From the **Main** menu, select **Access**, **Areas**.
2. From the toolbar, click on **Find** to locate the area record you wish to set up.
3. Under **Occupancy Control**, enable the **Occupancy Counting** radio button.
4. Save and exit the **Areas** form.

Two Man Rule (2MR)

The standard two man rule requires that at least two authorized badge holders occupy a controlled space at the same time. Two man rule can only be enabled if the operator has been granted **Occupancy Control** permission through the **Permissions** form, and **Occupancy Counting** has been enabled through the **Areas** form.

If desired, a digital output (DO) such as a blinking light can be activated on the reader following the first badge swipe, to alert the badge holder that a second badge swipe is required before access will be granted. This is an optional feature available by selecting **2MR Output** from the **Readers** form.

Modified Two Man Rule (M2MR)

The modified two man rule further restricts access to a controlled area based on the badge holders **M2MR Category Type**. Additionally, a **Door Control** option can be enforced which, after access has been granted to the first two badge holders, requires a door release button to be pressed before access is granted to any subsequent badge holders.

M2MR Category Type

There are three **M2MR Category Types** assigned through the **Categories** form:

- **None**
  Access to an **M2MR** controlled area will not be permitted while

M2MR control is enabled. By default, any existing or new categories are assigned this category type.

- **Guest**
  A **Guest** is not allowed entry to an **M2MR** controlled area unless two (2) **Team Members** are already present in the area.
- **Team Member**
  If the **M2MR** controlled area is empty, a **Team Member** is allowed entry only with a second **Team Member**. Additional **Team Members** can enter individually after the initial two (2) **Team Members** are present in the **M2MR** controlled area. Furthermore, at least two (2) **Team Members** must be present until all **Guests** have exited.

CAUTION If the micro controlling an **M2MR** area resets, it will automatically reset the occupancy count to zero. Therefore, in the unlikely event that this occurs while the area is occupied, the system administrator must disable **Two Man Rule**, evacuate the area, and then reinstate **M2MR**.

Modified Two Man Rule without Door Control

The first two badge holders to enter a controlled space must be **Team Members** and at least two **Team Members** must be present in the controlled space until all **Guests** have exited.

Modified Two Man Rule with Door Control

The first two badge holders to enter a controlled space must be **Team Members** and at least two **Team Members** must be present in the controlled space until all **Guests** have exited. Additionally, before any subsequent badge holders are allowed entry, a **Team Member** within the controlled space must press a door release button. The door release button must be pressed within the time specified in the **Door Release Timeout** field on the **Areas** form or the door will not be unlocked.

A warning device, such as a horn or a strobe light, can be activated to notify the team members in an area that a person desiring access has presented a valid badge at the reader and is awaiting entry. A digital output (DO) point is configured to control the warning device through the **Doors** form, by selecting an **M2MR** output. When the warning device is triggered, team members in the area press the door release button before the door timeout has elapsed to cause the door to unlock and allow entry to the area.

How to Set Up a Two Man Rule (2MR) Controlled Space

➤ **To set up the area readers:**

1. From the **Main** menu, select **Devices**, **Readers**.
2. From the toolbar, click on **Find** to locate the reader record you wish to set up.
3. Under **Logical Reader Function**, enable the appropriate radio button: **APB In**, **APB Out**, **T&A In**, or **T&A Out**.

NOTE

In an area with **Occupancy Control** enabled:

- All readers in the area must be assigned one of these logical functions: **APB In**, **APB Out**, **T&A In**, or **T&A Out**.
- **APB** readers must be set to **Global**. **Timed APB** is not allowed.
- The logical reader function **T&A In/Out** is NOT allowed for any reader.

4. Under **Set Micro**, verify that all readers in the area are assigned to the same micro.
5. Under **Reader Control**, **Number of Badges**, verify that all area readers are set to **Single**.
6. Optional: If you want to activate a DO (such as a blinking light) between the first and second required badge swipes, under **Two Man Rule**, click the **2MR Output** button and select the output to be triggered.
7. Save and exit the **Readers** form.

➤ **To set up the area doors:**

1. From the **Main** menu, select **Devices**, **Doors**.
2. From the toolbar, click on **Find** to locate the door record you wish to set up.
3. Under **Inputs**, click on **Door Sensor**.

NOTE The door sensor input and the door output must be physically connected to the same micro.

4. Select the appropriate input from the list displayed.

5. **Save** and exit the **Doors** form.

➤ **To enable Standard Two Man Rule for the Area**

NOTE In order to perform this function, you must have **Occupancy Control** permission.

1. From the **Main** menu, select **Access**, **Areas**.

2. From the toolbar, click on **Find** to locate the area record you wish to set up.

3. Under **Occupancy Control**, enable the **Occupancy Counting** radio button.

4. Under **Two Man Rule Control**, enable the radio button labeled **Standard**.

5. **Save** and exit the **Areas** form.

How to Set Up a Modified Two Man Rule (M2MR) Controlled Space with Door Control

➤ **To set up the area readers:**

1. From the **Main** menu, select **Devices**, **Readers**.

2. From the toolbar, click on **Find** to locate the reader record you wish to set up.

3. Under **Logical Reader Function**, enable the appropriate radio button: **APB In**, **APB Out**, **T&A In**, or **T&A Out**.

NOTE In an area with **Occupancy Control** enabled:

- All readers in the area must be assigned one of these logical functions: **APB In**, **APB Out**, **T&A In**, or **T&A Out**.
- **APB** readers must be set to **Global**. **Timed APB** is not allowed.
- The logical reader function **T&A In/Out** is NOT allowed for any reader.

4. Under **Set Micro**, verify that all readers in the area are assigned to the same micro.

5. Under **Reader Control**, **Number of Badges**, verify that all area readers are set to **Single**.

6. Optional: If you want to activate a DO (such as a blinking light) between the first and second required badge swipes, under **Two Man Rule**, click the **2MR Output** button and select the output to be triggered.

7. **Save** and exit the **Readers** form.

➤ **To set up the area doors:**

NOTE Each door sensor input, exit button input, **M2MR** output, and door strike output in the area must be unique and they all must be physically connected to the same micro.

1. From the **Main** menu, select **Devices**, **Doors**.

2. From the toolbar, click on **Find** to locate the door record you wish to set up.

3. Under **Inputs**, click on **Door Sensor** and select the appropriate input from the list displayed.

4. Define an **M2MR** output on each door to the area that will be used for entry (**APB IN** or **T&A IN**). Under **Two Man Rule**, click the **M2MR Output** button and select an output to associate with a warning device, such as a horn or strobe light.

5. Define an input as the exit button. Under **Inputs**, click **Exit Button** and select an input to associate with the exit button.

6. Under **Door Control**, click **Exit Button**, **Asserts Strike Enabled**.

NOTE The input selected as the **Exit Button** input must be set to the following:

On the **Inputs** form, under **Input Control Setup**, the **Input Enabled** button must be deselected (the default).

7. **Save** and exit the **Doors** form.

➤ **To enable M2MR with Door Control for the Area:**

NOTE In order to perform this function, you must have **Occupancy Control** permission.

1. From the **Main** menu, select **Access**, **Areas**.
2. From the toolbar, click on **Find** to locate the area record you wish to set up.
3. Under **Occupancy Control**, enable the **Occupancy Counting** radio button.
4. Under **Two Man Rule Control**, enable the radio button labeled **Modified Two Man Rule with Door Control**.
5. **Save** and exit the **Areas** form.

➤ **To define Categories for M2MR Category Types**

1. From the **Main** menu, select **Access**, **Categories**.
2. Define one or more categories (groups of people) who will access the controlled area and, under **Modified Two Man Rule Type**, enable the appropriate radio button, **None**, **Guest**, or **Team Member**.
3. **Save** and exit the **Categories** form.

➤ **To assign M2MR Categories to Areas and Badges**

1. From the **Main** menu, select **Access**, **Areas**.

2. From the toolbar, click on **Find** to locate the area records to be controlled.

3. Under **Categories**, click a **Cat#** button to assign an **M2MR** category to the area.

4. **Save** and exit the **Areas** form.

5. From the **Main** menu, select **Access**, **Badges**.

6. From the toolbar, click on **Find** to locate the badge records requiring access to the controlled area.

7. Under **Badge Categories**, click a **Cat#** button to assign a **M2MR** category to the badge.

8. **Save** and exit the **Badges** form.

How to Set Up a Modified Two Man Rule (M2MR) Controlled Space without Door Control

➤ **To set up the area readers:**

1. From the **Main** menu, select **Devices**, **Readers**.

2. From the toolbar, click on **Find** to locate the reader record you wish to set up.

3. Under **Logical Reader Function**, enable the appropriate radio button: **APB In**, **APB Out**, **T&A In**, or **T&A Out**.

NOTE

In an area with **Occupancy Control** enabled:

- All readers in the area must be assigned one of these logical functions: **APB In**, **APB Out**, **T&A In**, or **T&A Out**.
- **APB** readers must be set to **Global**. **Timed APB** is not allowed.
- The logical reader function **T&A In/Out** is NOT allowed for any reader.

4. Under **Set Micro**, verify that all readers in the area are assigned to the same micro.

5. Under **Reader Control**, **Number of Badges**, verify that all area readers are set to **Single**.

6. Optional: If you want to activate a DO (such as a blinking light) between the first and second required badge swipes, under **Two Man Rule**, click the **2MR Output** button and select the output to be triggered.

7. **Save** and exit the **Readers** form.

➤ **To set up the area doors:**

1. From the **Main** menu, select **Devices**, **Doors**.

2. From the toolbar, click on **Find** to locate the door record you wish to set up.

3. Under **Inputs**, click on **Door Sensor** and select the appropriate input from the list displayed.

NOTE The door sensor input and the door output must be physically connected to the same micro.

4. **Save** and exit the **Doors** form.

➤ **To enable M2MR without Door Control for the Area**

NOTE In order to perform this function, you must have **Occupancy Control** permission.

1. From the **Main** menu, select **Access**, **Areas**.

2. From the toolbar, click on **Find** to locate the area record you wish to set up.

3. Under **Occupancy Control**, enable the **Occupancy Counting** radio button.

4. Under **Two Man Rule Control**, enable the radio button labeled **Modified Two Man Rule without Door Control**.

5. **Save** and exit the **Areas** form.

➤ **To define Categories for M2MR Category Types**

1. From the **Main** menu, select **Access**, **Categories**.

2. Define one or more categories (groups of people) who will access the controlled area and, under **Modified Two Man Rule Type**, enable the appropriate radio button, **None**, **Guest**, or **Team Member**.

3. **Save** and exit the **Categories** form.

➤ **To assign M2MR Categories to Areas and Badges**

1. From the **Main** menu, select **Access**, **Areas**.

2. From the toolbar, click on **Find** to locate the area records to be controlled.

3. Under **Categories**, click a **Cat#** button to assign an **M2MR** category to the area.

4. **Save** and exit the **Areas** form.

5. From the **Main** menu, select **Access**, **Badges**.

6. From the toolbar, click on **Find** to locate the badge records requiring access to the controlled area.

7. Under **Badge Categories**, click a **Cat#** button to assign an **M2MR** category to the badge.

8. **Save** and exit the **Badges** form.

Table 21-1: Badge Transactions for Occupancy Counting and Two Man Rule Features

2MR Mode	Badge Event Description	Badge Transaction Generated
DISABLED (Occupancy Counting is enabled)	Invalid badge swipe	Invalid badge
	Unknown badge swipe	Badge Unknown
	Valid badge swipe on IN reader; door NOT opened	Valid no passage
	Valid badge swipe on IN reader; door IS opened	APB/T&A IN, occupancy count incremented by one
	Valid badge swipe on OUT reader; door NOT opened	Valid no passage
	Valid badge swipe on OUT reader; door IS opened	APB/T&A OUT, occupancy count decremented by one
STANDARD 2MR	Invalid badge swipe	Invalid badge
	Unknown badge swipe	Badge Unknown

Table 21-1: Badge Transactions for Occupancy Counting and Two Man Rule Features

2MR Mode	Badge Event Description	Badge Transaction Generated
	Two valid badge swipes on IN reader when room is empty, within specified reader interval time; door NOT opened	Valid no passage
	Two valid badge swipes on IN reader when room is empty, within specified reader interval time; door IS opened	Two APB/T&A IN, occupancy count incremented by two (to two)
	Two badge swipes on IN reader when room is empty, but second swipe is not within specified reader interval time	NO Transaction
	Two badge swipes on IN reader when room is empty, but second badge is invalid	Valid door locked
	Two badge swipes on IN reader when room is empty, but second badge does not have a valid category	Valid Door Locked and No Categ Match
	Two badge swipes on IN reader when room is empty, but first badge does not have a valid category and second badge is valid	No Categ Match and Not Validated
	One valid badge swipe on IN reader when occupancy count is at least two, door NOT opened	Valid no passage
	One valid badge swipe on IN reader when occupancy count is at least two, door IS opened	One APB/T&A IN, occupancy count incremented by one
	One valid badge swipe on OUT reader when occupancy count is at least three; door NOT opened	Valid no passage
	One valid badge swipe on OUT reader when occupancy count is at least three; door IS opened	One APB/T&A OUT, occupancy count decremented by one
	Two valid badge swipes on OUT reader when occupancy count is two, within specified reader interval time; door NOT opened	Valid no passage

Table 21-1: Badge Transactions for Occupancy Counting and Two Man Rule Features

2MR Mode	Badge Event Description	Badge Transaction Generated
	Two valid badge swipes on OUT reader when occupancy count is two, within specified reader interval time; door IS opened	Two APB/T&A OUT, occupancy count decremented by two (to zero)
	Two valid badge swipes on OUT reader when occupancy count is two, but second swipe is not within specified reader interval time	NO Transaction
MODIFIED 2MR	Invalid badge swipe	Invalid badge
	Unknown badge swipe	Badge Unknown
Note: Door NOT opened case includes door release not pressed within specified time interval.	Two valid badge swipes on IN reader when room is empty, within specified reader interval time, M2MR category type NOT Team Member and is Valid GUEST	Two Valid door locked
	Two badge swipes on IN reader when room is empty, within specified reader interval time, but second badge category type id NOT valid (not on area).	Valid door locked and No Categ Match
	Two badge swipes on IN reader when room is empty, within specified reader interval time, but first badge category type id NOT valid (not on area).	No Categ Match and Not Validated
	Two valid badge swipes on IN reader when room is empty, within specified reader interval time, M2MR category type NOT Team Member and IS valid GUEST.	Two Valid door locked
	Two valid badge swipes on IN reader when room is empty, within specified reader interval time, M2MR category type IS Team Member; door NOT opened	Valid no passage

Table 21-1: Badge Transactions for Occupancy Counting and Two Man Rule Features

2MR Mode	Badge Event Description	Badge Transaction Generated
	Two valid badge swipes on IN reader when room is empty, within specified reader interval time, M2MR category type IS Team Member; door IS opened	Two APB/T&A IN, occupancy count incremented by two (to two)
	Two valid badge swipes on IN reader when room is empty, but second swipe is not within specified interval time, M2MR category type IS Team Member	NO Transaction
	One valid badge swipe on IN reader when occupancy count is at least two, M2MR category type NOT None; door NOT opened	Valid no passage
	One valid badge swipe on IN reader when occupancy count is at least two, M2MR category type NOT None; door IS opened	One APB/T&A IN, occupancy count incremented by one
	One valid badge swipe on IN reader when occupancy count is at least two, M2MR category type IS None but valid (on area	Valid door locked
	One valid badge swipe on IN reader when occupancy count is at least two, M2MR category type IS None and category not on area	No Categ Match
	One valid badge swipe on OUT reader when occupancy count is at least three and there would NOT be two Team Members left in the room	Valid door locked
	One valid badge swipe on OUT reader when occupancy count is at least three and there would be two Team Members left in the room; door NOT opened	Valid no passage
	One valid badge swipe on OUT reader when occupancy count is at least three and there would be two Team Members left in the room; door IS opened	One APB/T&A OUT, occupancy count decremented by one
	Two valid badge swipes on OUT reader when occupancy count is two, within specified reader interval time; door NOT opened	Valid no passage

Table 21-1: Badge Transactions for Occupancy Counting and Two Man Rule Features

2MR Mode	Badge Event Description	Badge Transaction Generated
	Two valid badge swipes on OUT reader when occupancy count is two, within specified reader interval time; door IS opened	Two APB/T&A OUT, occupancy count decremented by two (to zero)
	Two valid badge swipes on OUT reader when occupancy count is two, but second swipe is not within specified reader interval time	NO Transaction

NOTES

Elevator Control

Chapter 22

Overview

Elevator Control allows you to control access to floors serviced by an elevator. This feature works only with the Micro/5, Micro MPX/2000, and Micro MPXN2000 microcontrollers. It allows the micro to control multiple elevator readers, DI's and DO's. This chapter shows how to implement the Elevator Control feature using any one of the following methods:

1. Elevator Micro/DO Configuration
2. Elevator Reader/DO Configuration
3. Elevator Reader/DI/DO Configuration

System Configuration Standards

- Elevator Control is a part of the BASE Picture Perfect software package.
- Elevator Control is implemented on Micro/5, Micro MPX/2000, or Micro MPXN2000 configurations only.
- A maximum of 64 floors can be serviced by one elevator.
- 128 separate, user-configurable elevator categories are supported per elevator.
- The elevator buttons are enabled for a length of time (duration) defined on the **Devices**/**Outputs** form. All the buttons (outputs) should be set to the same duration.
- Badges must be authorized for an elevator reader in order to gain access to an assigned floor.
- Picture Perfect can address up to 4096 micros with each micro having up to a maximum of 16 elevator readers. The recommended limit is based on memory and disk capacity of the Picture Perfect host system.

Elevator Access

There are two ways to grant access to an elevator floor. Both require a valid badge swipe to an elevator configured reader and a valid category match between the badge and a floor or floors. Depending on the elevator control configuration, one of the following methods will then activate the elevator floors.

Method 1

This is the default and is available on all configurations.

Following a valid badge swipe, the badge is checked for category floors for this elevator. For each badge category that matches the elevator's categories, access is granted to the set of floors denoted by the matched category. Therefore, the set of accessible floors will be the combined set of matched category floors.

For example, a badgeholder has General Access and Computer Department as categories on his badge. The elevator allows floors 1, 2, and 5 for General Access, and floors 3 and 4 for Computer Department. Therefore, when this badgeholder enters the elevator, floors 1 through 5 will be activated. Refer to Figure 22-1.

For a double-badge transaction configuration, each badge must first have access to the reader, then the same access validation as above takes place. The difference is that the final set of accessible floors will be denoted by the union of the two badges' matched categories (which correspond to floors). In other words, if the elevator category matches a category found on either badge, access is granted. See Chapter 26 - Double-Badge Transaction.

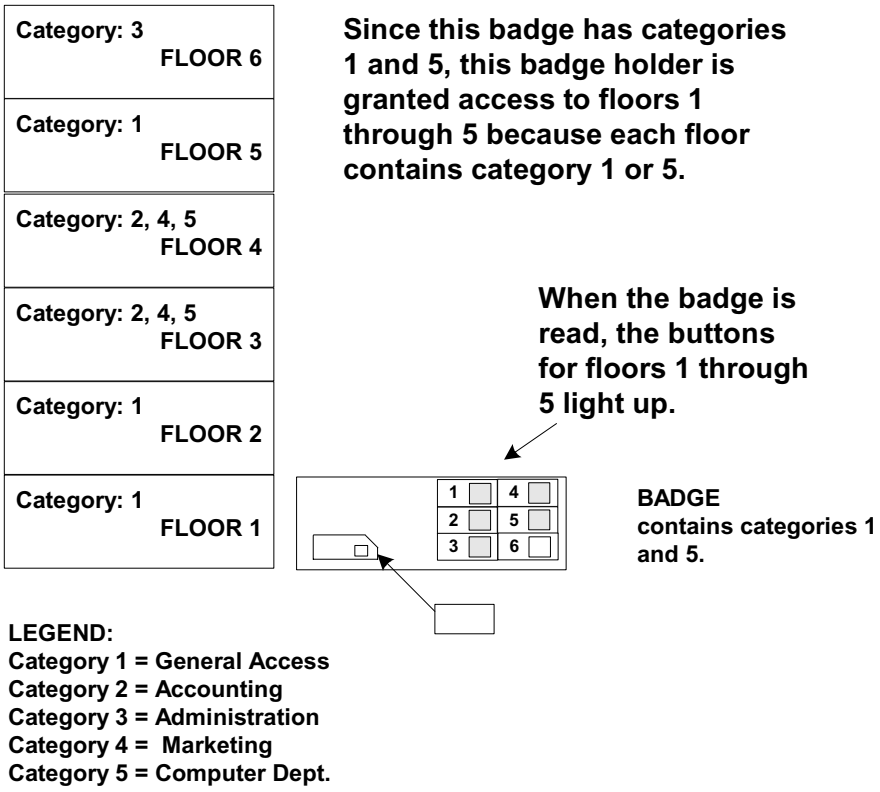


Figure 22-1. Example of Elevator Control - Method 1

Method 2

When enabled, this method is available on the following elevator configurations:

- Reader / DI / DO - See "To Set Up Example 2 in a Reader / DI / DO Configuration:" on page 22.19

Following a valid badge swipe, a floor button (DI) is used to enter a floor number. A category match must exist between the floor selected and the badge before the DO (digital output) is fired to activate the elevator. This method will generate a floor transaction, valid or invalid, which is stored, along with the floor selected, and can be used for history and reporting purposes.

For example, a badgeholder has General Access as the sole category on his badge. The elevator allows floors 1, 2, and 5 for General Access, and floors 3 and 4 for Computer Department. Therefore, when this badgeholder enters the elevator and pushes floor buttons 1, 2 or 5, the elevator will be activated and a **Valid** floor transaction will be generated. Entering numbers 3 or 4 would return an **Invalid** floor transaction and no access would be granted. Refer to Figure 22-2.

For a double-badge transaction configuration, each badge must first have access to the reader, then the same access validation as above takes place. The difference is that the final set of accessible floors will be denoted by the union of the two badges' matched categories (which correspond to floors). In other words, if the elevator category matches a category found on either badge, access is granted. See Chapter 26 - Double-Badge Transaction.

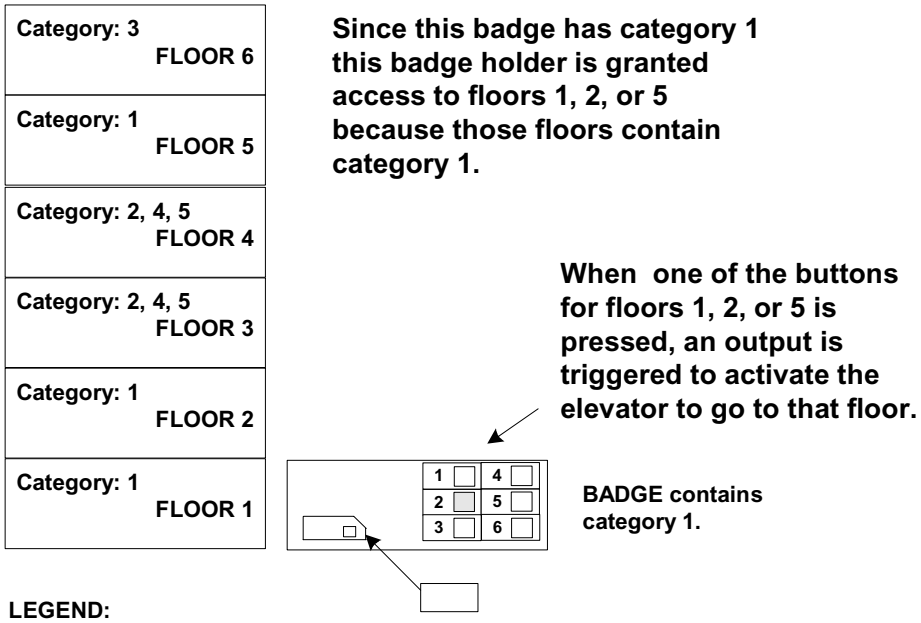

Category: 3
FLOOR 6
Category: 1
FLOOR 5
Category: 2, 4, 5
FLOOR 4
Category: 2, 4, 5
FLOOR 3
Category: 1
FLOOR 2
Category: 1
FLOOR 1
Since this badge has category 1 this badge holder is granted access to floors 1, 2, or 5 because those floors contain category 1.
When one of the buttons for floors 1, 2, or 5 is pressed, an output is triggered to activate the elevator to go to that floor.
1
2
3
4
5
6
BADGE contains category 1.
LEGEND:
Category 1 = General Access
Category 2 = Accounting
Category 3 = Administration
Category 4 = Marketing
Category 5 = Computer Dept.

Figure 22-2. Example of Elevator Control - Method 2

Duration Time for Elevator Access

Method 1

During the period of time when the elevator's digital outputs are active (buttons are lit), any number of those buttons may be selected. The amount of time that the elevator buttons are active, after a valid badge swipe, is set using the **Devices** / **Outputs** form. The same duration time should be used for all digital outputs assigned to floors. See Figure 22-6. Outputs Form Configured for Elevator-Floor Button on page 22.10.

Method 2

During a set period of time, a button may be selected. This amount of time in which the entry is accepted, after a valid badge swipe, is set using the **Devices** / **Outputs** form. The same duration time should be used for all digital outputs. See Figure 22-6. Outputs Form Configured for Elevator-Floor Button on page 22.10.

Elevator Access for All Categories

A badge that has the **All Categories** category assigned to it will be allowed access to all floors defined for the elevator, regardless of whether the **All Categories** category is present on the area.

Free Access Floors

There are two methods of allowing free access to particular elevator floors. One method requires a badge swipe; the other does not need a badge at all.

Free Access for All Badges

Free access for all badges allows any badge that has access to the elevator reader to have free access to designated floors. The "wild-card" category is used as an elevator category on the **Category Floors** form to designate which floors are free access.

To set up a wild-card category, you must select **All Categories** from the **Category** picklist, and assign the free-access floors to it. See Figure 22-16. Select Floors Form on page 22.21 This allows a badgeholder to gain access to the free-access floors, as long as the badge is authorized for the elevator reader.

Free Access Without a Badge

The free access without a badge method allows anyone to walk onto an elevator and have free access to designated floors (without using a badge in any way). For this method to work, you must configure a **Door State** of "unlocked" for the door to each floor you want included, then associate a digital output to the door. See Figure 22-17. Doors Form Configured for Elevator Door on page 22.22

When this is in place, the free-access floor buttons will always be lit, regardless of a badge swipe. When a badge is swiped, access is given to all floors for which the badge is valid, along with the free-access floors. Free access without a badge can be scheduled as described in "Scheduling Elevator Free Access" on page 22.21.

Elevator Control Setup

➤ **To implement Elevator Control, follow these steps for each access-controlled elevator in the system:**

1. Define the maximum number of floors you want to control using the **Control** / **Parameters** form. Depending on the configuration, this number is based on either per elevator micro or is divided between all elevator readers on a micro.

2. Depending on the configuration, define a Micro / 5 as an elevator micro on the **Devices** / **Micros** form, or define a Micro / 5 as a normal micro and a reader on that micro as an elevator reader on the **Devices** / **Readers** form.

3. Define an output for each floor on the **Devices** / **Outputs** form.

4. For a **Reader/DI/DO** configuration, define an input for each floor on the **Devices** / **Inputs** form.

5. Define the type of elevator configuration, the number of floors for the elevator and assign an output (and an input in the case of a **Reader/DI/DO** configuration) to each floor on the **Devices** / **Elevator** form.

6. Define sets of floors for categories on the **Devices** / **Category Floors** form.

Defining the Number of Floors

Use the **Control** / **Parameters** form to specify the maximum number of elevator floors on a micro(Figure 22-3). This number could be per elevator (**Micro/DO** configuration) or it could be distributed between up to 16 elevators (**Reader/DO** or **Reader/DI/DO** configurations). This number will then be used as the default on the **Elevator** form, and will apply to all the elevators defined in the system. The maximum number of floors serviced by a micro (elevator) is 64. See "The Parameters Form" on page 4.27.

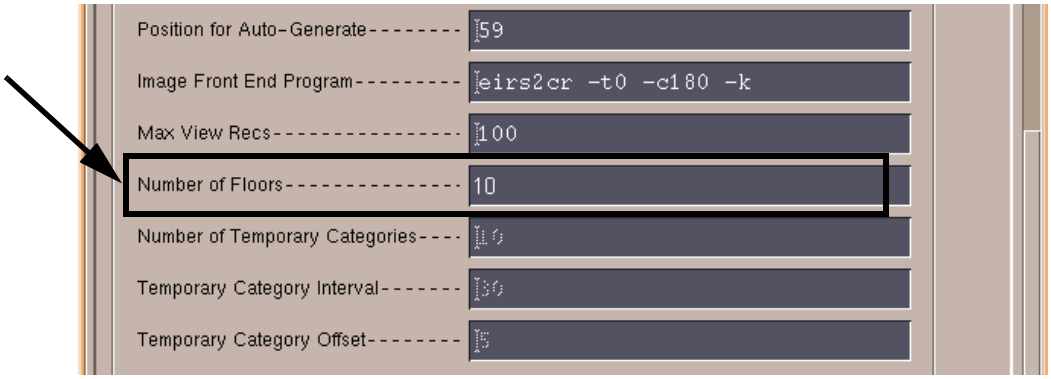


Figure 22-3. Number of Floors Field on Parameters Form

Defining Micros

Required for: Micro / DO Configuration Only

Use the **Devices** / **Micros** form to define the micro type as an **Elevator** for each micro used with an elevator in the Picture Perfect system (Figure 22-4). Only a Micro / 5 should be designated as an elevator micro. See "The Micros Form" on page 10.18.

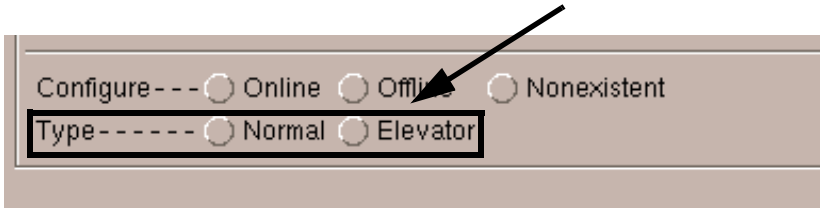


Figure 22-4. Type Field on Micros Form

Defining Readers

Required for: Reader / DO Configuration
Reader / DI / DO Configuration

Use the **Devices** / **Readers** form to define the reader type as an **Elevator** for each reader used with an elevator in the Picture Perfect system (Figure 22-5). See "The Readers Form" on page 13.22.

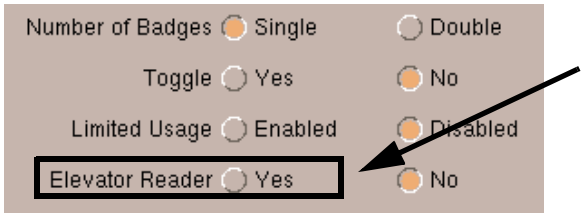


Figure 22-5. Type Field on Readers Form

Defining Outputs

Use the **Devices** / **Outputs** form to define a digital output for each elevator floor button (Figure 22-6). This output will light and activate the button for a floor to which access is allowed. For more information, see "The Outputs Form" on page 12.3.

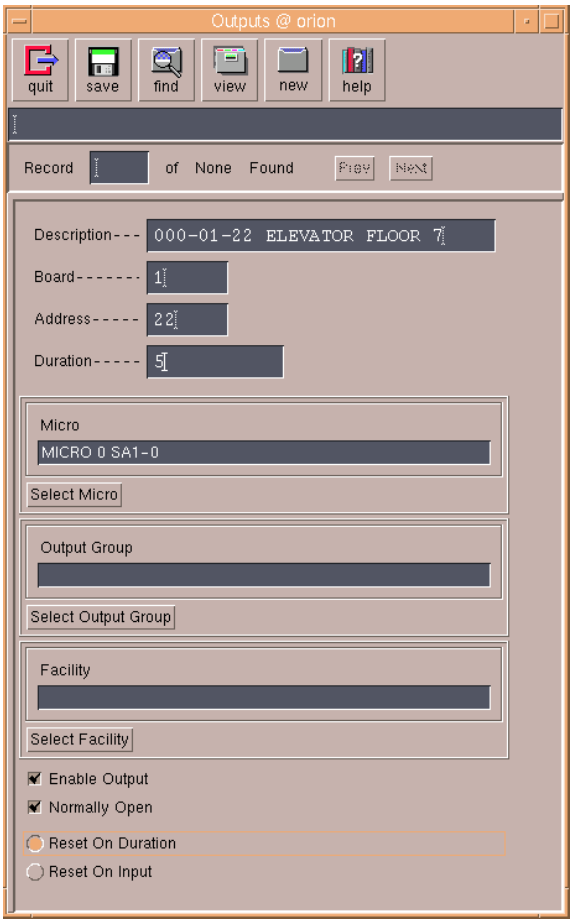


Figure 22-6. Outputs Form Configured for Elevator-Floor Button

Keep the following in mind when defining elevator floor outputs:

- At least one 16-digital-output (16 DO / DOR) board must be configured with an elevator micro.
- The elevator digital-output addresses must be in the 16 to 31 range for each 16 DO / DOR board used.
- For a maximum configuration (64 floors), four 16 DO / DOR boards must be installed in a Micro / 5.
- The duration time should be the same for all elevator digital outputs.

NOTE

In a **Reader/DI/DO** configuration, make sure the **Reader Interval Time** does not exceed the **Output (DO) Duration**.

- Elevator digital outputs do not require output groups to be associated with them.

Defining Inputs

Required for: Reader / DI / DO Configuration

Use the **Devices** / **Inputs** form to define a digital input for each elevator floor button (Figure 22-6). When this input is received by the micro, it performs a category match and if successful, activates the associated output for a floor to which access is allowed. For more information, see “The Inputs Form” on page 12.9.

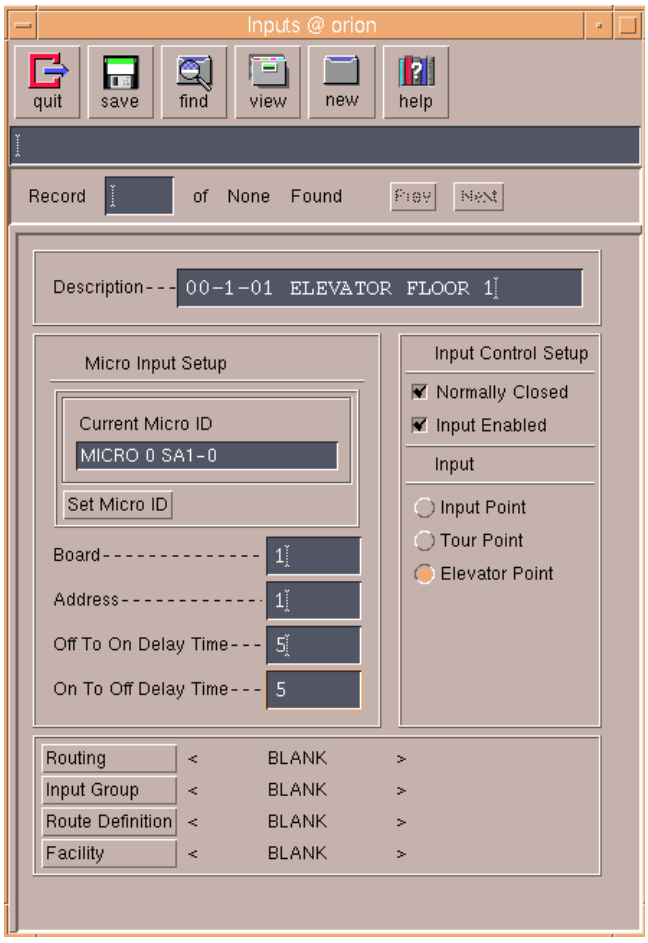


Figure 22-7. Inputs Form Configured for Elevator-Floor Button

Keep the following in mind when defining elevator floor inputs:

- Toggle the **Elevator Point** button to **On** to make this input an elevator input.
- At least one 20DI board must be configured with an elevator configured to have the **Reader/DI/DO** configuration.
- For a maximum configuration (39 floors), an 8RP reader configured to be an elevator reader, two 20DI boards and two 16DO boards must be installed in a Micro/5.
- Elevator DI's do not require an input group to be associated with them.

The Elevators Form

Use the **Elevators** form (Figure 22-8) to select the type of elevator configuration, define the number of floors, assign the elevator to a previously defined elevator micro or reader and then tie previously defined outputs (and inputs in the case of **Reader/DI/DO** configurations) to the corresponding floors. Perform this setup for each of the access-controlled elevators in your facility.

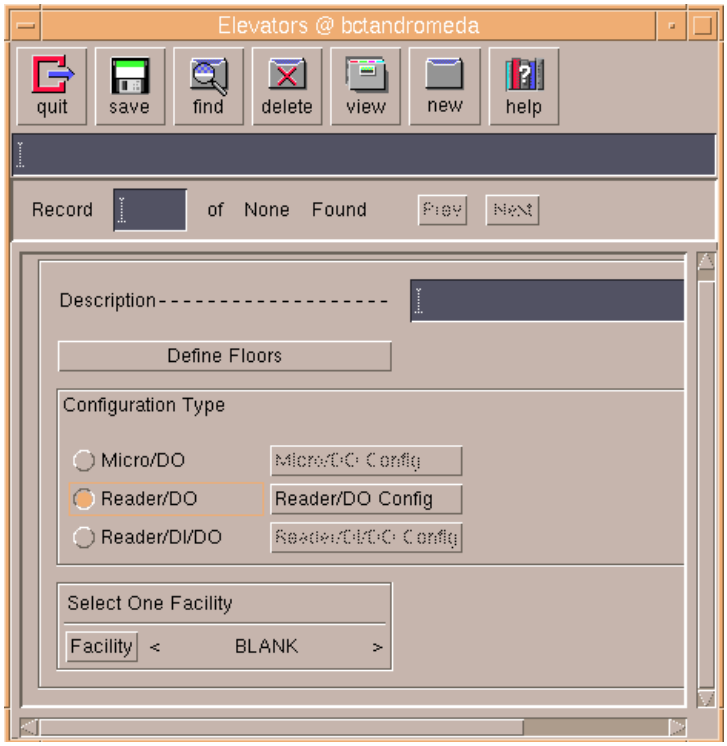


Figure 22-8. Elevator Form

Description

Type the name of the elevator in the **Description** box (for example, Lobby, East Wing 1, West Wing 3).

Define Floors

Click the **Define Floors** button to specify the number of floors and the floor labels (names), which in turn will determine how many floor buttons will display for that elevator on the configuration screen.

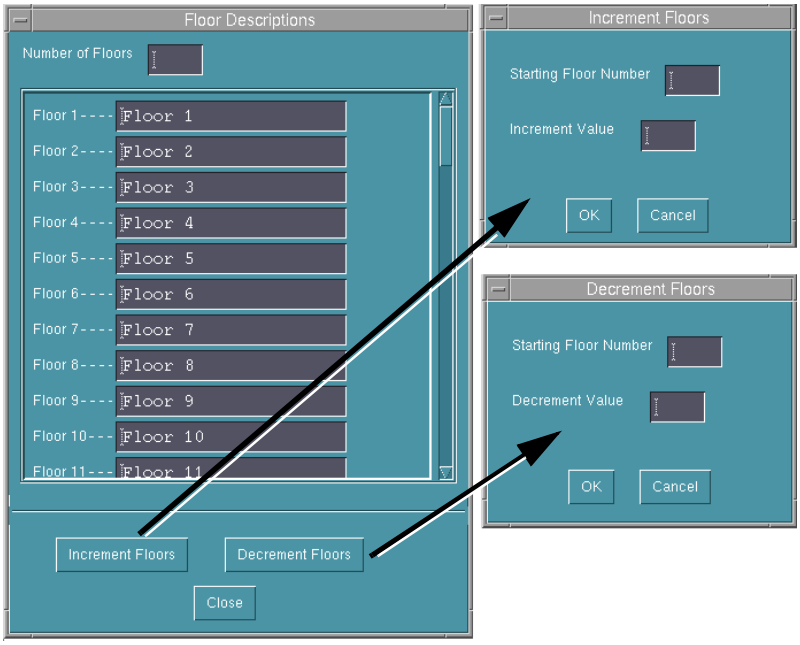


Figure 22-9. Floor Description Window

Number of Floors

An entry is required in this field for the input and output buttons to be displayed on the configuration screens. If no entry is made an error message will display when the record is saved. If an invalid entry is made, the default will be used. The default number of floors is the maximum number set in the **Control**/**Parameters** form.

Floor Labels

The default floor labels are Floor 1 through Floor x, where x=the maximum number of floors. There are two ways to edit the floor labels:

1. Type directly in the text box.

2. Click the **Increment Floors** or **Decrement Floors** button to display a form allowing you to specify a **Starting Floor Number** and either an **Increment Value** or **Decrement Value** in order to change a range of floor labels. See the following examples.

Example 1: To set up an elevator that will only access floors 20 through 40, and the name of floor 20 is Lobby 2:.

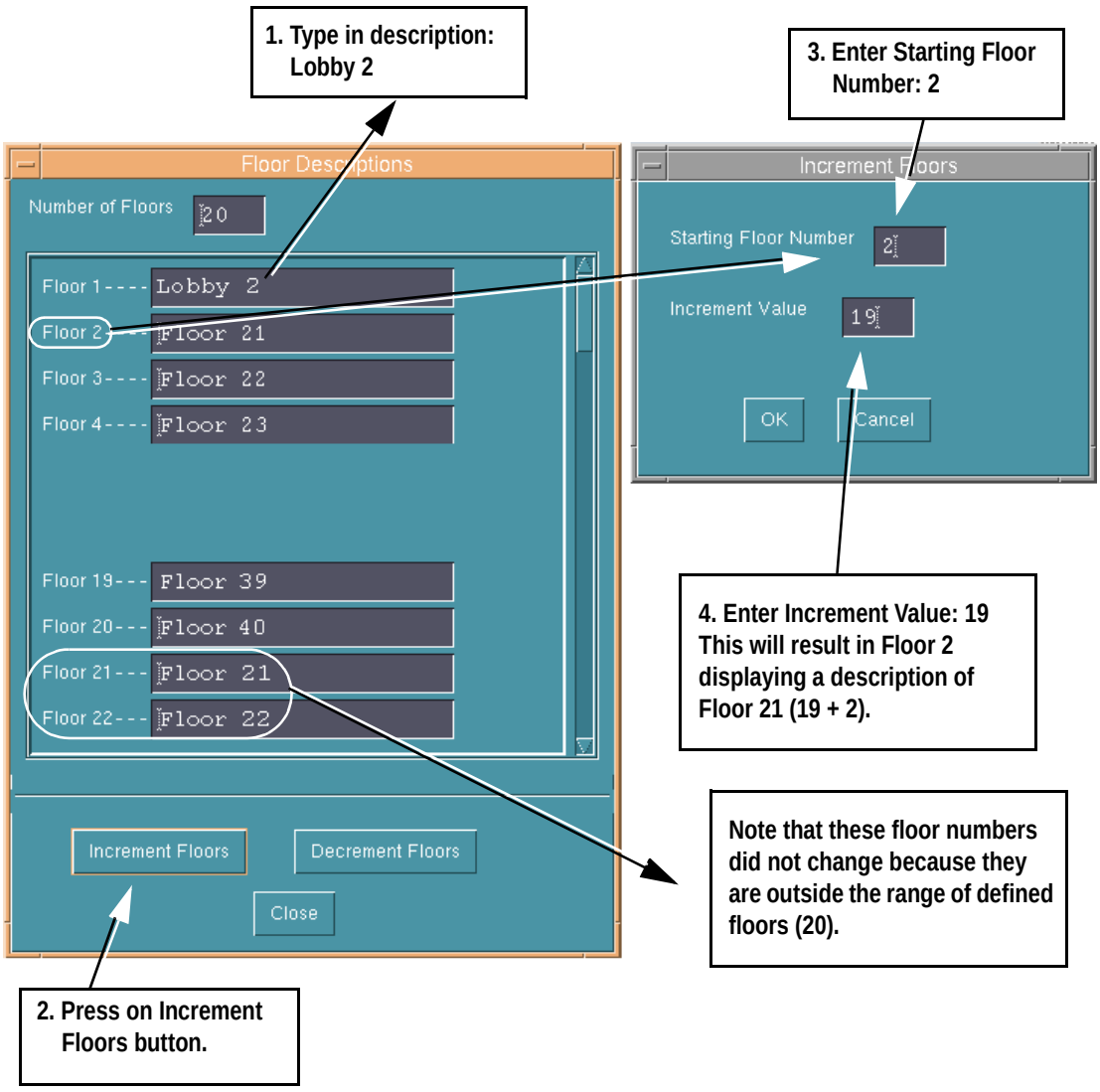

1. Type in description: Lobby 2
3. Enter Starting Floor Number: 2
Floor Descriptions
Number of Floors 20
Floor 1---- Lobby 2
Floor 2---- Floor 21
Floor 3---- Floor 22
Floor 4---- Floor 23
Floor 19--- Floor 39
Floor 20--- Floor 40
Floor 21--- Floor 21
Floor 22--- Floor 22
Increment Floors
Starting Floor Number 2
Increment Value 19
OK
Cancel
4. Enter Increment Value: 19 This will result in Floor 2 displaying a description of Floor 21 (19 + 2).
Increment Floors
Decrement Floors
Close
Note that these floor numbers did not change because they are outside the range of defined floors (20).
2. Press on Increment Floors button.

Figure 22-10. Example of Increment Floors

➤ **To reset the default floor labels (Floor 1....Floor n, corresponding to floors 1...n):**

1. Click the **Increment Floors** or **Decrement Floors** button.
2. Enter "1" as the **Starting Floor Number**.
3. Enter "0" or blank as the **Increment** or **Decrement** value.

4. Press Enter.

Example 2: To set up an elevator that will access 64 floors described as Basement, Parking, Lobby and Floor 2 through Floor 62:

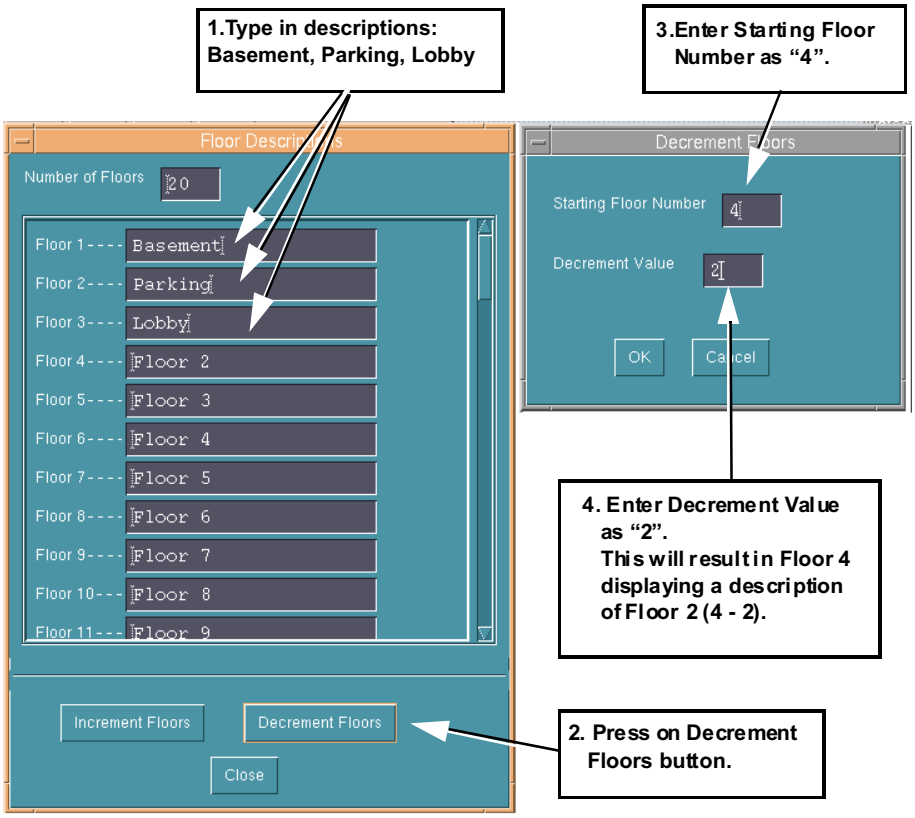

1.Type in descriptions: Basement, Parking, Lobby
3.Enter Starting Floor Number as "4".
Floor Descriptions
Number of Floors 20
Floor 1---- Basement
Floor 2---- Parking
Floor 3---- Lobby
Floor 4---- Floor 2
Floor 5---- Floor 3
Floor 6---- Floor 4
Floor 7---- Floor 5
Floor 8---- Floor 6
Floor 9---- Floor 7
Floor 10--- Floor 8
Floor 11--- Floor 9
Increment Floors
Decrement Floors
Close
Decrement Floors
Starting Floor Number 4
Decrement Value 2
OK
Cancel
4. Enter Decrement Value as "2". This will result in Floor 4 displaying a description of Floor 2 (4 - 2).
2. Press on Decrement Floors button.

Figure 22-11. Example of Decrement Floors

Configuration Type

Select one of the following types:

- **Micro/DO** - See "To Set Up Example 2 in a Micro/DO Configuration" on page 22.17.
- **Reader/DO** - See "To Set Up Example 2 Reader/DO Configuration" on page 22.18.
- **Reader/DI/DO** - See "To Set Up Example 2 in a Reader/DI/DO Configuration:" on page 22.19.

➤ **To Set Up Example 2 in a Micro/DO Configuration**

1. In **Configuration Type**, select **Micro/DO**.

2. Click the **Micro/DO Config** button to display the following window.

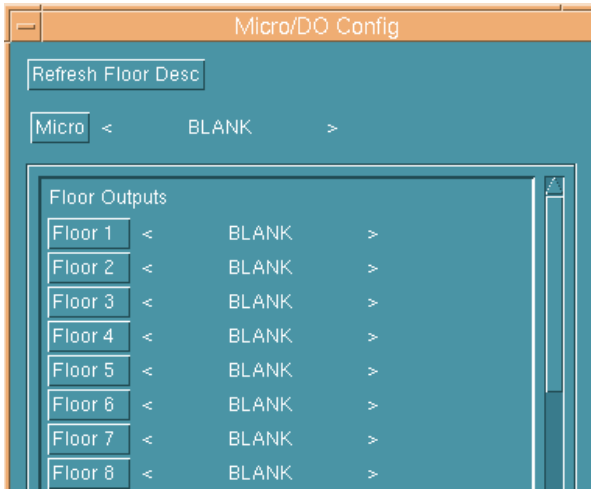


Figure 22-12. Micro/DO Config

3. Click the **Micro** button and select a micro from the picklist. If multiple readers are configured on an elevator micro, the first reader controls the elevator.

4. For each floor, click the appropriate button and select an output from the picklist. this type of configuration supports up to 64 floors per micro. Click the **Refresh Floor Defs** button to update the floor labels if changes have been made since the **Config** window was displayed.

➤ To Set Up Example 2 Reader/DO Configuration

1. In **Configuration Type**, select **Reader/DO**.

2. Click the **Reader/DO Config** button to display the following window.

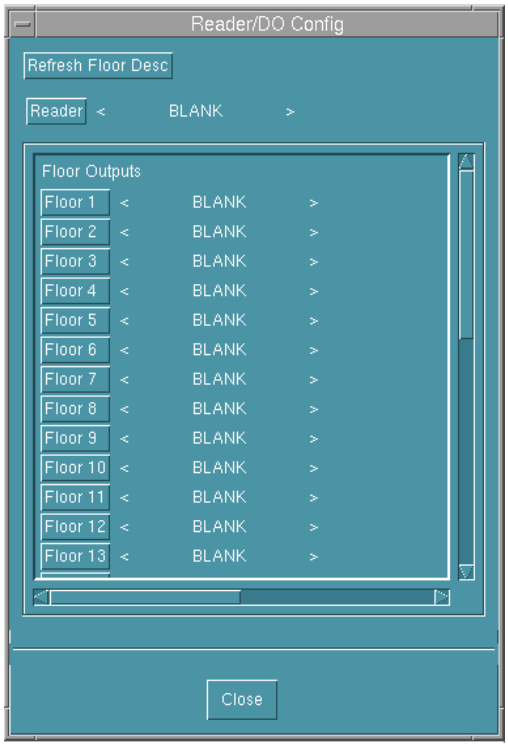


Figure 22-13. Reader/DO Config

3. Click the **Reader** button and select a reader from the picklist. The reader should be defined as an elevator reader.

4. For each floor, click the appropriate button and select an output from the picklist. This type of configuration supports up to 64 floors per micro. Click the **Refresh Floor Defs** button to update the floor labels if changes have been made since the **Config** window was displayed.

➤ **To Set Up Example 2 in a Reader/DI/DO Configuration:**

1. In **Configuration Type**, select **Reader/DI/DO**.

2. Click the **Reader/DI/DO Config** button to display the following window.

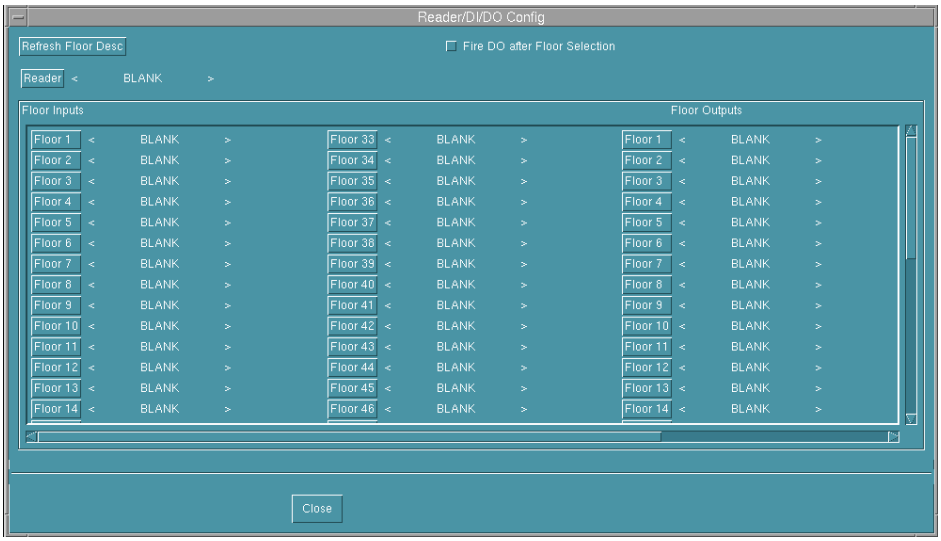


Figure 22-14. Reader/DI/DO Config

3. Select the **Fire DO after Floor Selection** button to enable Elevator Access Method 2 in which, after a valid badge read, a floor has to be selected and if it is an accessible floor, the DO will be activated. See page 22.4 for more information on this method of elevator access. Otherwise the default Method 1 in which, after a valid badge read, the DOs for all accessible floors are activated, will be employed. See page 22.2 for more information on this method of elevator access.

4. Click the **Reader** button and select a reader from the picklist. The reader should be defined as an elevator reader.

5. For each floor, click the appropriate button and select an input and output from the picklists. To appear in the picklist, the input must be defined as an elevator input. Every input chosen must have a corresponding output chosen. This type of configuration supports up to 39 floors per micro. Click the **Refresh Floor Defs** button to update the floor labels if changes have been made since the **Config** window was displayed.

Select One Facility

Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

The Category Floors Form

Use the **Category Floors** form (Figure 22-15) to assign a category to certain floors of each elevator. This category is used to establish a match between the badge and the floor when granting access. The number of categories assigned to each elevator must not be greater than 128. The number of floors displayed on this form is determined by the **Number Of Floors** field defined on the **Elevator** form.

Figure 22-15. Category Floors Form

Facility

Click the **Facility** button to display the facilities picklist. Selecting a facility will allow the administrator to restrict operator access to those records in a specific facility. For more information, see Chapter 5 - Facilities and Facility Profiles.

Elevator

Click the **Elevator** button to display a picklist of elevators. Select the elevator to which you want to assign **Category Floors**, then click **Close**.

Category

Click the **Category** button to display a picklist of categories. Select the category to which you want to assign floors for this elevator, then click **Close**.

Select Floors

This button is available only after an elevator is selected. Click the **Select Floors** button to display toggle buttons for each floor defined for that elevator. Toggle the buttons on for each floor that is to be assigned this category.

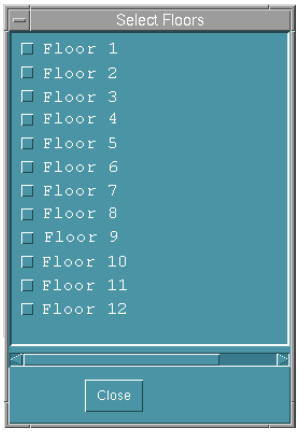


Figure 22-16. Select Floors Form

Scheduling Elevator Free Access

In order to schedule elevator free access, a door must be defined on the **Doors** form (Figure 22-17) and a digital output corresponding to a floor number must be assigned to the **Door Strike Output** field. By using this setup, a door can be scheduled to **Lock** or **Unlock** through the **Schedule, Door Events** form. When the door is scheduled to unlock, the digital output is triggered and the associated floor's button is activated.

See "The Doors Form" on page 13.35 and "Door Events" on page 16.30.

If a door is unlocked by a Door Event, a badge is not required to activate the digital output corresponding to that floor. This button may be selected by anyone, not necessarily an authorized badgeholder.

The digital output can be deactivated in the same manner by scheduling a door to lock using the **Door Events** form. The button will not be lit, and a valid badge will be required to access the elevator's floors.

For each floor requiring a scheduled free access, its digital output must be associated with a door, and each door must then be scheduled for a specific action.

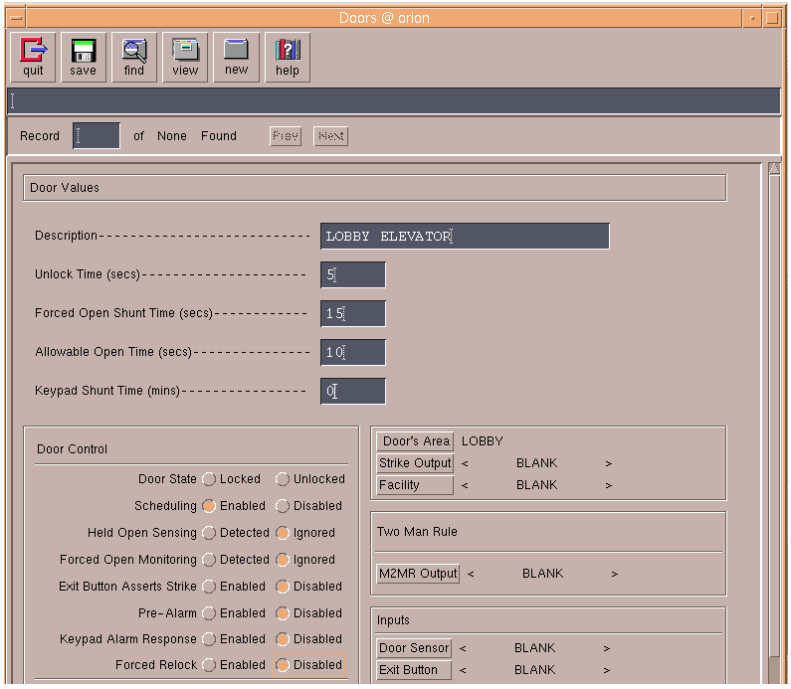


Figure 22-17. Doors Form Configured for Elevator Door

Floor Tracking

When Method 2 is employed for Elevator Access, floor transactions are generated and stored along with the floor selected. This data can then be used for history and reporting purposes.

➤ **To generate a Floor Tracking report follow the steps below:**

1. From the **Main Menu**, select **Reports**, then **History**. The **Badge History-New Report** form appears.

2. From the menu bar, select **Format**, then **Query**. The **Badge Query** form appears.

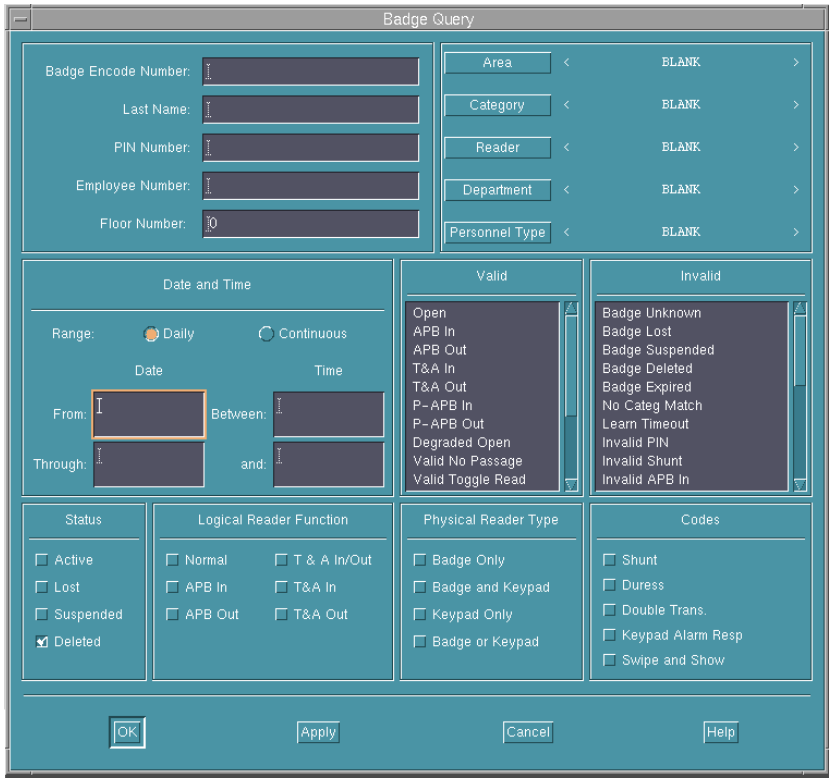


Figure 22-18. Badge Query Window

3. In the **Floor Number** field, enter the relative floor number as opposed to the actual floor number. The relative floor number is a number in the range 1...64. For example, for an elevator with floors labeled 31 through 80, the relative floor numbers would be 1 through 50. To obtain an access report for floor 40, the relative floor number 10 must be entered.

NOTES

Keypad Alarm Response

Chapter 23

Overview

Keypad Alarm Response allows alarms to be cleared only after an input has been physically reset (such as closing a door that has been forced open), and an authorized badge has been swiped, and a keypad code entered. The use of this feature is intended for strict controlled resets by authorized card holders only.

This feature requires a response to access violations at both the host and reader levels. The alarm response consists of two actions: a response at the host or sub-host and a response badge swipe and keypad code at the reader. The badge must be specially authorized for **Keypad Alarm Response**.

This chapter shows how to configure a Picture Perfect system to implement the **Keypad Alarm Response** feature.

Keypad Alarm Response Function

The **Keypad Alarm Response** function starts with an access violation: the door is forced open or is held open too long. The violation activates one of the door's input groups, which then triggers the alarm and outputs associated with that input group. Forcing the door open activates the door's forced-open input group, and holding the door open for too long activates the door's open-too-long input group. The input group and its associated outputs are not reset until the door is closed and a valid keypad response and badge swipe are made on the reader associated with the door.

Without the **Keypad Alarm Response** feature, the access violation would end when the door closes. With **Keypad Alarm Response**, the violation ends when a valid keypad response is entered after the door closes. When the violation ends, the violation's input group along with the associated alarm and outputs are reset.

NOTE

Ending the violation is not the same as completely responding to the violation's alarm. The alarm response is not complete until the violation is ended by a keypad response and the operator has fully responded to the alarm on the **Alarm Monitor**.

Violation Notification

When a violation starts, the host displays an alarm on the **Alarm Monitor**. The **Condition** field on the **Alarm Monitor** indicates “alarm”. When the violation ends, the alarm changes to “reset” state. The access violation alarms must be routed to the **Alarm Monitor** for **Keypad Alarm Response** to function properly.

Keypad Response

Alarm response at the **Badge-and-Keypad** reader requires an alarm-response code, a badge swipe, and a PIN or duress code. The alarm-response code is entered on the keypad as the first activity. The required order of activity is outlined below:

1. Press (*) or (+), enter the **Alarm-Response Code**, then press (#).
2. Swipe the badge.
3. Press (*) or ,(+) enter the **PIN** or **Duress Code**, then press (#).

When the reader is configured for double-transaction, the first and/or second component transaction may enter an alarm-response code. See Chapter 26 - Double-Badge Transaction.

Keypad response only affects an active access violation on a door to which the reader is associated. It cannot affect any other door. The following situations must exist for the keypad response to be valid:

- The door must be closed *before* the keypad response.
- The badge must be authorized for keypad response.
- The entire reader transaction must be granted access. For example, an invalid **PIN** or a category mismatch will invalidate the keypad response.

Valid keypad alarm response does not unlock the door. Keypad alarm response is essentially an acknowledgment that the door is secure, so it makes no sense to unlock the door for the keypad response. Since the door does not open, keypad response is independent from antipassback. This means that keypad response cannot fail due to the badge’s antipassback status. It also means that keypad response cannot change the badge’s antipassback status.

As with all other reader activity, keypad response is reported in the host’s activity monitor and/or badge history. The transaction explicitly reports that it is keypad response. When keypad response is valid, a report is made that the transaction was valid but did not gain access. Invalid

keypad responses report the reason for failure. In addition to usual failure reports, the keypad response feature also reports the following:

- Invalid alarm-response code.
- Badge is not authorized for keypad response.
- Door is not secured (the door is physically open).

Operator Response

Operators respond to alarms requiring keypad alarm response in the same manner as any alarm associated with a physical input. The only difference is that the keypad alarm response resets the alarm rather than a physical change in an input.

The vehicle for operator response is the **Alarm Monitor**. Its operation is not changed by keypad alarm response. The **Alarm Monitor** presents information to the operator on each alarm that is routed to it. The information includes the alarm's **Condition** and **Process State**.

Condition

- **Alarm** - Alarm is logically on.
- **Reset** - Alarm is logically off.

When the violation first occurs, its **Condition** is "alarm" and its **Process State** is "active". When a valid keypad response occurs, the violation's **Condition** goes to "reset".

Process State

- **Active** - No alarm response has been made.
- **Pending** - Partial alarm response has been made.
- **Complete** - Final alarm response has been made.

Selecting the alarm on the **Alarm Monitor** pops up a window which displays the alarm's instructions and allows the operator to enter a response. The instructions are the only means of notifying the operator that keypad alarm response is required. The ways in which the operator can exit the pop-up are listed below:

- **Cancel** - Response is ignored and the **Process State** stays the same.
- **OK** - Response is saved and the **Process State** goes to "pending". The alarm remains on the **Alarm Monitor**.
- **Remove** - Response is saved and the **Process State** goes to "complete". When the alarm's **Condition** is "reset", the alarm is removed from the **Alarm Monitor**. When the alarm's **Condition** is "alarm", the alarm remains on the **Alarm Monitor**.

Multiple Access Violations

It is possible for the same access violation to occur more than once during a keypad alarm response. For instance, a door can be forced open, then closed, and then forced open again all before the keypad alarm response is completed for the first violation. In this situation, only one alarm appears in the **Alarm Monitor**. The alarm first appears with a count of one, and is incremented by each subsequent violation.

A single valid keypad response resets all occurrences of the violation and the operator responds to all occurrences using the single alarm.

It is also possible for a door to be forced open and open too long during a single keypad alarm response. For instance, the door can be held open for too long, then closed, and then forced open all before a valid keypad response is made for the sensing violation. In this situation, the violations appear as separate alarms on the **Alarm Monitor**.

A single valid keypad response resets both alarms. Each alarm is separately removed from the **Alarm Monitor** when the response is completed.

Door Operation While Violation is Active

The door will continue to operate normally while the keypad alarm response is active. This makes it possible for someone to gain access through the door even though the response to the violation has not been completed.

Keypad Alarm Response Configuration

➤ **Follow these steps to set up a Keypad Alarm Response (details on each step are given below):**

1. Define the **Alarm-Response Code** (maximum of 10 digits) on the **Devices** / **Micros** form.

2. Define a reader as a **Badge-and-Keypad** reader on the **Readers** form.

3. Enable the **Keypad Alarm Response** on the **Devices** / **Doors** form.

4. Enable a badge to be used as the **Keypad Alarm Response** badge on the **Access** / **Badges** form.

Defining the Alarm-Response Code

Use the **Devices**/**Micros** form (Figure 23-1) to define an alarm-response code (up to 10 digits) for each micro on which **Keypad Alarm Response** will be implemented. When an authorized badgeholder responds to an access violation on a door using this feature, he will enter this code (for reader keypads on this micro).

The same code can be used on any number of the system's micros, or you can configure different codes for different micros. The alarm-response code must be different from the shunt code assigned to that micro. Failure to define an alarm-response code prevents **Keypad Alarm Response** from working on any of the micro's doors.

See "The Micros Form" on page 10.18 of Chapter 10 - Micros.

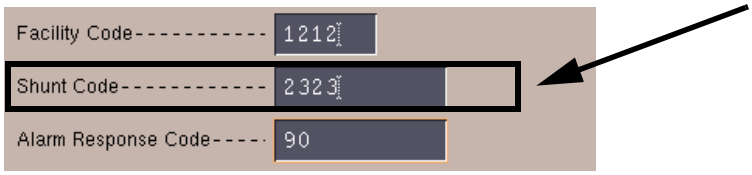


Figure 23-1. Alarm-Response Code Field on Micros Form

Defining a Reader

Use the **Devices**/**Readers** form (Figure 23-2) to define a reader as a **Badge-and-Keypad** reader. **Keypad Alarm Response** only works with doors associated with **Badge-and-Keypad** readers. Once the reader is defined, you then associate it with a door that has **Keypad Alarm Response** enabled.

See "The Readers Form" on page 13.22 of Chapter 13 - Categories, Areas, Readers, and Doors.

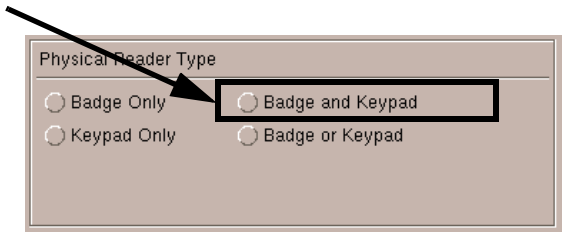


Figure 23-2. Badge and Keypad Field on Readers Form

Enabling Keypad Alarm Response

Use the **Devices** / **Doors** form (Figure 23-3) to enable **Keypad Alarm Response**. This feature can be enabled or disabled for individual doors, and status requests on doors will show this. The door must be associated with a **Badge-and-Keypad** reader. You will be warned if the door is not associated with at least one **Badge-and-Keypad** reader connected to a micro with an alarm-response code. You may save the door information anyway, or make the necessary associations before saving the door again, but **Keypad Alarm Response** does not function correctly unless those associations are made.

While it is possible to configure a Picture Perfect system to have more than one reader associated with one door, and for one reader to be connected to more than one doorstrike output, **Keypad Alarm Response** does not support this configuration.

Keypad Alarm Response can be incorporated into scheduling. For instance, if a reader is scheduled to change between being a **Badge-Only** reader and a **Badge-and-Keypad** reader for a door with **Keypad Alarm Response** enabled, alarms occurring during the badge-only state will not require a keypad alarm response, while those occurring during the badge-and-keypad state will require it. If an alarm occurs during the badge-and-keypad state, but has not yet been responded to when the schedule change goes into effect, the reader will remain in the **Keypad Alarm Response** mode until proper response is made, then the reader will change to the badge-only mode.

See “The Doors Form” on page 13.35, and also see Chapter 16 - Schedules and Modes.

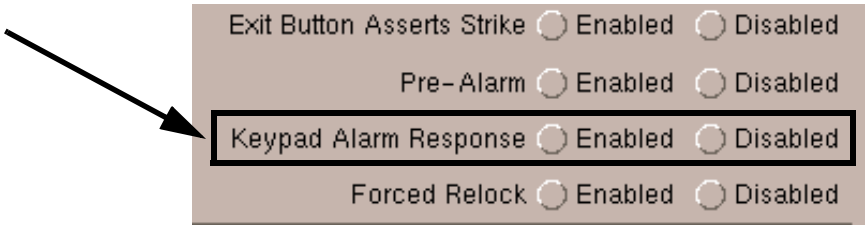


Figure 23-3. Keypad Alarm Response Field on Doors Form

Enabling a Badge

Use the **Access** / **Badges** form (Figure 23-4) to enable a badge for **Keypad Alarm Response**. Status requests on badges show whether or not a badge is authorized for keypad response. Keypad response authorization is independent of badge status (such as permanent, contractor, etc.), but it must be an active badge.

See “The Badges Form” on page 14.10 of Chapter 14 - Badges.

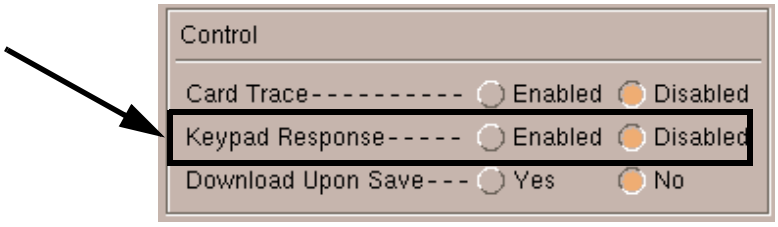


Figure 23-4. Keypad Alarm Response Field on Badges Form

Disabling Keypad Alarm Response

Keypad Alarm Response can be disabled in the following ways:

- Disable **Keypad Alarm Response** on the **Devices** / **Doors** form. This prevents Keypad Alarm Response for both types of access violations on that door.
- The following situations inhibit an access violation completely. The violation is not reported to the host and **Keypad Alarm Response** does not function.
  - **Access Violation** input group not configured.
  - **Access Violation** input group disabled.
  - **Access Violation** input group not associated with an alarm.
  - Disabled alarm associated with the **Access Violation** input group.

Disabling or enabling **Keypad Alarm Response** does not affect an active access violation. Therefore, enabling **Keypad Alarm Response** while a door is forced open does not change the fact that the violation resets as soon as the door closes. The change has no effect until the current violation ends.

NOTES

Pre-Alarm Notification

Chapter 24

Overview

Pre-alarm Notification informs users that a sensing violation is about to occur. The warning notification method can vary. It can be set to trigger an output, such as a horn or a light, and/or send a signal to the **Alarm Monitor**.

Pre-Alarm Function

Pre-alarm is activated one minute before a sensing violation occurs on an open door, and will not function if the **Allowable Open Time** for that door is less than one minute. The length of the **Pre-alarm** interval will always be one minute since it is not user configurable.

Pre-alarm can be reset by a valid reader transaction or by closing the door. Otherwise, it resets when the sensing violation occurs.

Activating the **Pre-alarm** means activating the **Pre-alarm** input group. Resetting the **Pre-alarm** means resetting the **Pre-alarm** input group.

When a valid reader transaction occurs while waiting for the **Pre-alarm** to activate, its timing is restarted. During the one-minute interval between the **Pre-alarm** and the sensing violation, a valid reader transaction will restart the timing and reset the **Pre-alarm**. When the one-minute **Pre-alarm** interval expires, the **Pre-alarm** resets and the sensing violation activates. Typically, the sensing violation is reset by closing the door.

Pre-Alarm Notification Methods

There are three methods of **Pre-alarm** notification:

- An alarm can be sent to the host which, if routed, will be displayed on the **Alarm Monitor**.
- An audible warning signal can be activated.
- A combination of the above (an alarm and an audible warning signal).

Disabling Pre-Alarm

Pre-alarm can be disabled in the following ways:

- Do not configure a **Pre-alarm** input group for a door.

- Disable **Pre-alarm** on the **Devices** / **Doors** form.
- Configure the door with an **Allowable Open Time** less than or equal to one minute.
- Disable the **Pre-alarm** input group. This entirely disables the **Pre-alarm** by preventing the **Pre-alarm** input group and its associated alarm and outputs from changing state.
- Disable the **Pre-alarm** input group's alarm. This only disables **Pre-alarm** notification. It does not affect the outputs associated with the **Pre-alarm** input group.
- Disable the **Pre-alarm** input group's associated output groups and / or outputs. This only disables the **Pre-alarm** outputs; it does not affect **Pre-alarm** notification. When a **Pre-alarm** is associated with more than one output, they can be individually disabled using the separate outputs and output groups.

Disabling a door's ability to detect a sensing violation will not cancel the door's current timer.

Enabling or disabling **Pre-alarm** using the radio button has no effect on an on-going timing process. If **Pre-alarm** is disabled when the door opens, it stays disabled until the door closes. If **Pre-alarm** is enabled when the door opens, it stays enabled until the door closes.

Creating a **Pre-alarm** input group during a timing process will not affect the **Pre-alarm** ; it continues to behave as if it were enabled. Removing a **Pre-alarm** input group during the timing process will have different effects based on when it is removed. Removing it before **Pre-alarm** activates will prevent activation. Removing it after activation will prevent **Pre-alarm** from resetting. By removing the input group, the door loses its pointer to the input group and its associated alarm and outputs.

Changing the door's **Allowable Open Time** also has different effects, based on when it is changed and the value to which it is changed. The rules below are listed in priority order. In other words, the second rule has no effect when the first rule overrides it.

- Changing the **Allowable Open Time** after **Pre-alarm** activates has no effect.
- When the old **Allowable Open Time** prevents **Pre-alarm** from activating and it is changed after the door is opened, the change has no effect.
- **Pre-alarm** will not activate when the new **Allowable Open Time** prevents it from doing so (60 seconds or less).
- When **Pre-alarm** can activate and the **Allowable Open Time** is changed to a value which means **Pre-alarm** should already have activated, it immediately does so.

- When **Pre-alarm** can activate and the **Allowable Open Time** is extended, the timing continues uninterrupted. **Pre-alarm** activates when the door has been opened for the new **Allowable Open Time** minus one minute.

Pre-Alarm Configuration

Use the **Devices** / **Doors** form (Figure 24-1 and Figure 24-2) to configure **Pre-Alarm** for an individual door.

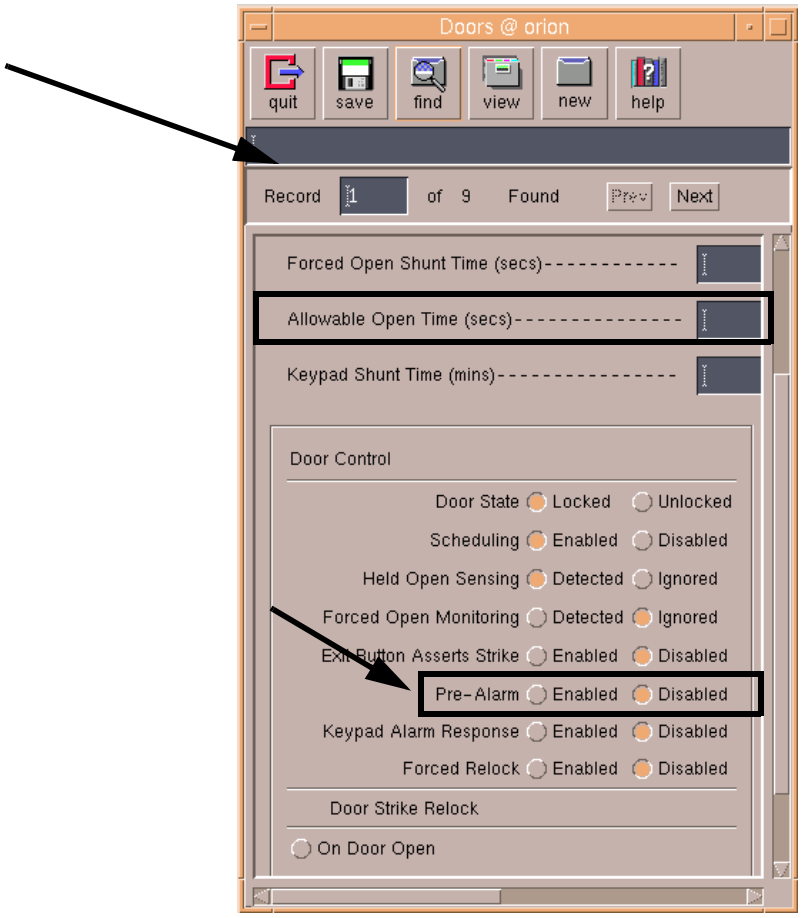


Figure 24-1. Pre-Alarm Fields on Top of Doors Form

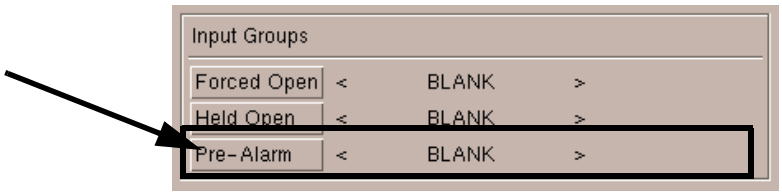


Figure 24-2. Pre-Alarm Field on Bottom of Doors Form

Enable this feature using the **Pre-alarm** radio button. In order for **Pre-alarm** to generate a warning signal, an input group must be defined. The associated outputs operate any type of physical device that can be connected to a micro, including devices that produce audible warning signals.

The **Pre-alarm** feature is not designed to associate inputs with the **Pre-alarm** input group. **Pre-alarm** uses the **Alarm** routing defined on the **Devices/Alarms** form, and the **Door Status** will display the door's **Pre-alarm** input group and whether the door is disabled or enabled for **Pre-alarm**.

The **Allowable Open Time** on the **Doors** form must be greater than 60 seconds in order to use **Pre-alarm**, as the **Pre-alarm** input group will be triggered 60 seconds before a sensing violation is detected and reported. **Keypad Shunt Time** can be used to extend the allowable open time on a door. In this case, the **Pre-alarm** warning signal will be triggered one minute before the **Held Open Too Long** violation is issued.

➤ **Follow these steps to set up Pre-alarm Notification:**

1. Select **Devices**, then **Doors**.

2. Use the radio button to enable **Pre-alarm**.

3. Click the **Pre-alarm** button to display a picklist of Input Groups. Select the desired Input Group, then click **Close**.
   - If a warning signal is required at the host, an alarm must be associated with that Input Group.
   - If an audible warning signal is required, an Output Group containing at least one digital output must be associated with that Input Group.

See "The Doors Form" on page 13.35 of Chapter 13 - Categories, Areas, Readers, and Doors.

Badge Trace

Chapter 25

Overview

This feature allows an operator to trace an individual badge and route its activity to a specific routing location--regardless of the routing definition for each of the area's input groups. When the traced badge is swiped through a reader, a record of the transaction is sent to the **Badge Trace** routing destination (usually to the **Activity Monitor** and the **History Log**). The routing for **Badge Trace** transactions is set up on the **Parameters** form. Specific badges are that are to be traced are identified on the **Badges** form.

If **Badge Trace** is routed to the **Activity Monitor**, a **T** is displayed in front of the badge to indicate that the badge is being traced.

If the **Badge Trace** is routed to the **History Log**, it is logged as an existing badge transaction, such as **Open** or **Invalid**.

Badge Trace Configuration

To configure the **Badge Trace** feature, select a routing for traced badges using the **Card Trace Routing** field of the **Parameters** form (Figure 25-1). (See Chapter 4 - Initial Setup for details on completing this form.)

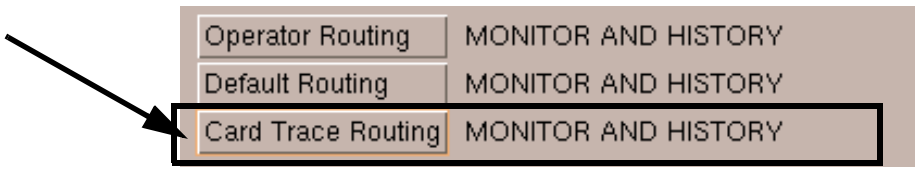


Figure 25-1. Badge-Trace Routing Portion of Parameters Form

Tracing a Badge

When you want to trace a particular badge, you must enable it for **Card Trace** on the **Badges** form (Figure 25-2). When you no longer want to trace it, you must disable **Card Trace**.

➤ **To enable or disable Card Trace:**

1. Bring up the **Access**, **Badges** form.

2. Use the **Find** feature to display the desired badge record.

3. Select **Enabled** for the **Card Trace** field in the **Control** box to trace a badge, or select **Disabled** for this field to discontinue the **Badge Trace**.

4. Click **Save**.

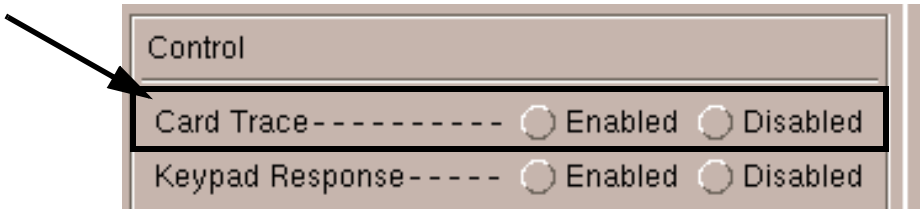


Figure 25-2. Control Portion of Badges Form

Double-Badge Transaction

Chapter 26

Overview

This feature provides double-badge control for access to high security areas. Operator-defined readers will require two badges or two badges with PINs to be presented before a door strike is activated.

Double-Badge Function

Access through double-transaction readers is only granted when two complete, valid, and distinct transactions are presented to the reader. "Complete" means that both transactions have all necessary information. "Valid" means that both transactions are recognized by the reader. "Distinct" means that both transactions are individually distinguishable (a single badge cannot be used twice to complete a double-badge transaction).

- Badge-only readers need two distinct badges.
- Keypad-only readers need two distinct badge-encode numbers.
- Badge-and-keypad readers need two complete badge-and-keypad transactions. The first reader activity may be a shunt code or an alarm response code entered on the keypad. This first activity is optional. Next must come the presentation of a badge to the reader. Following that, a PIN or duress code must be entered on the keypad. The two transactions must have different badges, but they may use the same PIN or duress code. The required order for a badge-and-keypad reader transaction is outlined below:

    1. Shunt *or* Alarm Response code.
    2. Badge swipe.
    3. PIN *or* Duress code.

NOTE

On badge-and-keypad readers, shunt codes, duress codes, and alarm responses may be entered by either or both transactions. For example, the first transaction may shunt the reader's door while the second transaction responds to an alarm on that door.

The separate transactions comprising a double transaction may use the same or different categories while gaining access through the reader.

Each double-badge reader must have an **Interval Time** defined on the **Devices**/**Readers** form. This specifies the number of seconds allowed between stages of the transaction. If, during the processing of a transaction, there is no reader activity for the specified interval-time period, the transaction "times out" and is considered at an end. The next reader activity will be considered as the start of a new transaction. "Time outs" are not reported to users.

Double-Badge Reporting

All reader transactions are tracked by two separate reports, one for each component transaction. These reports are presented in the **Activity Monitor** and/or **Badge History**.

Each transaction reports whether it is the first or second activity on a single- or double-transaction reader. When both transactions are valid, each transaction reports that access was granted. When both transactions fail, each transaction reports its individual reason for failure. When only one transaction fails, it reports its reason for failure while the other reports that it was valid but did not gain access. It is possible to detect the one component transaction's failure before the other component transaction has been completely validated. In this case, the other component transaction will report that it was not completely validated.

All transaction reports include a time stamp. It shows the time at which the access decision was made, not when the transaction started. Since a double-transaction's access decision is made when both component transactions are complete, both transactions will report the same time stamp.

Double-Badge Configuration

To configure a reader for double-badge function, set the **Number Of Badges** field on the **Devices**/**Readers** form to **Double** (Figure 26-1). All readers can be configured to require one or two transactions for granting access. In addition, the **Interval Time** field on this form (Figure 26-2) must be completed. The interval time specifies the number of seconds allowed between stages of the transaction. (See Chapter 13 - Categories, Areas, Readers, and Doors for details on the **Readers** form.)

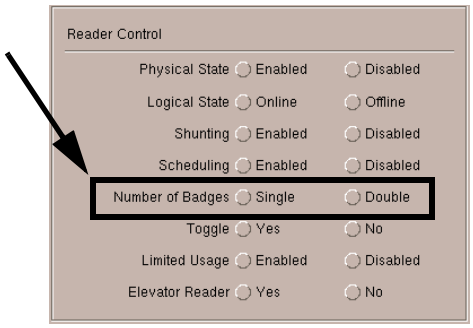


Figure 26-1. Reader-Control Portion of Readers Form

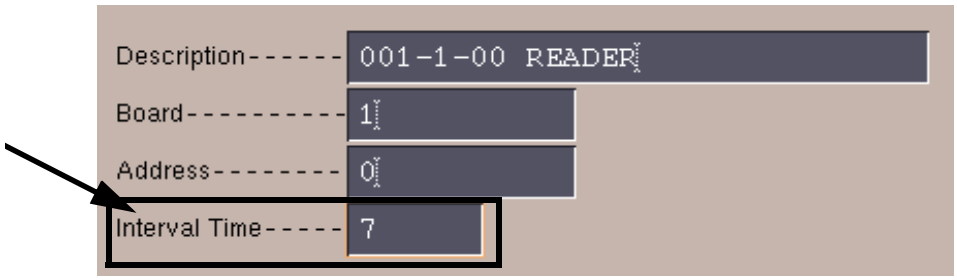


Figure 26-2. Interval-Time Portion of Readers Form

The double-badge configuration can also be changed by scheduling. This is done by setting the **Num Of Badges** field on the **Schedule**/**Reader Events** form (Figure 26-3). (See Chapter 16 - Schedules and Modes for details on the **Reader Events** form.)

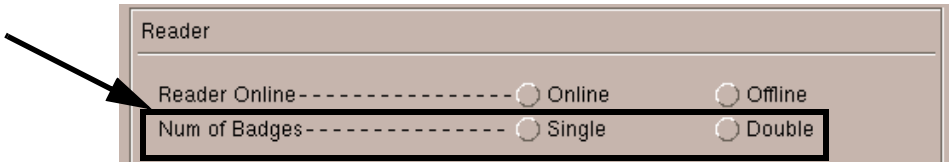


Figure 26-3. Reader Portion of Reader Events Form

A change to the definition will be reflected in a micro's local database. The only micro affected by any change to a reader's **Number-of-Badges** definition is the one which is physically connected to the reader.

A change in the micro's local database does not affect any on-going reader activity. In other words, changing a reader from double-transaction to single-transaction while the micro is processing the reader's activity does not affect that process; two complete valid transactions are still needed before access may be granted. After the two transactions are processed, the micro will grant or deny access based on a single transaction.

A reader's **Number-of-Badges** definition is not limited by the reader's physical or logical type. For example, it is possible to define a double-transaction, badge-and-keypad, antipassback-in reader.

Reader status requests will display the reader's current **Number-of-Badges** definition.

Monitoring Alarms

Chapter 27

Overview

The **Alarm Monitor** displays incoming alarms and their priority, count, status, and time of occurrence. Alarms display on the **Alarm Monitor** in order of their priority.

When an alarm occurs, the system beeps and displays a pop-up window to notify the operator. The operator displays instructions for the alarm by selecting the alarm from a list on the **Alarm Monitor**. The operator records a response to an alarm either by selecting pre-written alarm responses from the **Alarm Response** window or by typing a response.

If your system has the optional **Network Alarm Notification** feature, the network alarm notification window displays on a designated terminal (usually one of the host consoles) when an alarm with network priority goes beyond the allowed operator response time.

Prerequisites

The following Picture Perfect forms are prerequisites:

Forms	Purpose
PRINTER ROUTINGS TERMINALS	To log alarms to a printer and display on a console.
PERMISSION GROUPS PERMISSIONS OPERATORS	To authorize operators to respond to alarms.
INPUT GROUPS INPUTS	To allow inputs to activate when an alarm condition occurs.
OUTPUT GROUPS OUTPUTS	To allow outputs to trigger when associated inputs activate.
MESSAGES RESPONSES ALARMS	To facilitate notification of and response to alarms.

What You Will Be Doing

This chapter shows you how to view, respond to, and remove alarms, and how to control alarms that require manual reset.

The Alarm Monitor

Select **Monitors**, then **Alarm** to display the **Alarm Monitor** window (Figure 27-1). Use the **Alarm Monitor** window to view and select any alarms that occur: active, pending, or completed. Alarms that are not yet acknowledged are active; alarms that are acknowledged but not removed are pending; and alarms that are removed but not yet reset are completed.

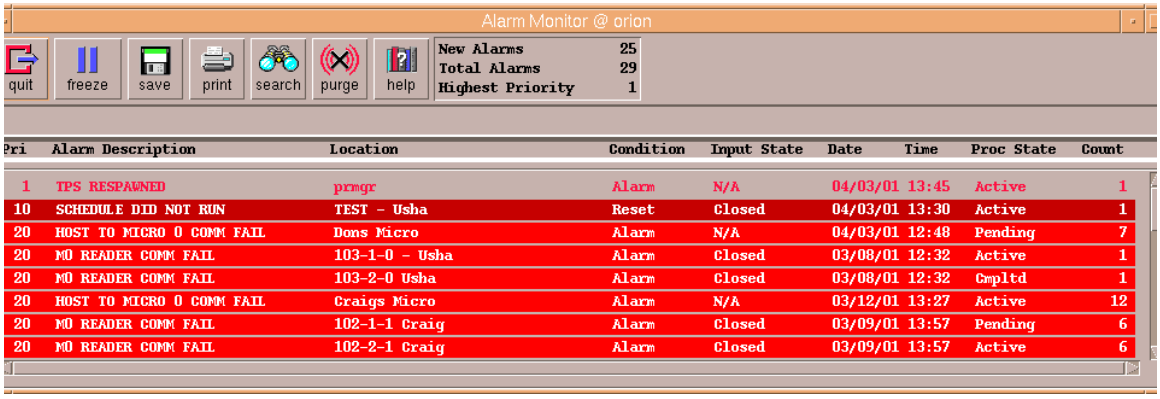

Alarm Monitor @ orion
quit
freeze
save
print
search
purge
help
New Alarms 25
Total Alarms 29
Highest Priority 1
Pri Alarm Description Location Condition Input State Date Time Proc State Count
1 TPS RESPAWNED prmgr Alarm N/A 04/03/01 13:45 Active 1
10 SCHEDULE DID NOT RUN TEST - Usha Reset Closed 04/03/01 13:30 Active 1
20 HOST TO MICRO 0 COMM FAIL Dons Micro Alarm N/A 04/03/01 12:48 Pending 7
20 MO READER COMM FAIL 103-1-0 - Usha Alarm Closed 03/08/01 12:32 Active 1
20 MO READER COMM FAIL 103-2-0 Usha Alarm Closed 03/08/01 12:32 Cmpltd 1
20 HOST TO MICRO 0 COMM FAIL Craigs Micro Alarm N/A 03/12/01 13:27 Active 12
20 MO READER COMM FAIL 102-1-1 Craig Alarm Closed 03/09/01 13:57 Pending 6
20 MO READER COMM FAIL 102-2-1 Craig Alarm Closed 03/09/01 13:57 Active 6

Figure 27-1. Alarm Monitor Window

The first and second columns of the **Alarm Monitor** display the **Priority** and **Description** that you defined for the alarm using the **Alarms** form. The third column displays the alarm **Location** (defined using the description field of forms such as **Inputs**, **Readers**, **Micros**, and **Input Group**, and could also include an 8RP board number). The next columns are: **Condition** (alarm, reset, tamper), **Input State** (open, closed, N / A, short, or ground), **Date**, **Time**, **Process State** (active, pending, completed, bumped or notify), and **Count** (number of times the alarm has set and reset).

To see all the columns on the **Alarm Monitor**, stretch the window frame or use the scroll bar.

Notification of Alarms

When an alarm occurs, a pop-up **Alarm Alert** window (Figure 27-2) appears on every terminal in the system that is configured to receive alarms. The window beeps and displays the number of new alarms, the number of unanswered alarms, and the highest priority alarm that is pending.

Figure 27-2. Alarm Alert Window

When you click on the **Silence** button, the beeping stops and the button changes to **Stand By**. If another alarm occurs, the beeping will resume and the information displayed will be updated.

Open the **Alarm Monitor** window and select the alarm to display the **Alarm Response** window (Figure 27-3). The instructions for this alarm will be listed. The alarm type is displayed in the title bar of the window.

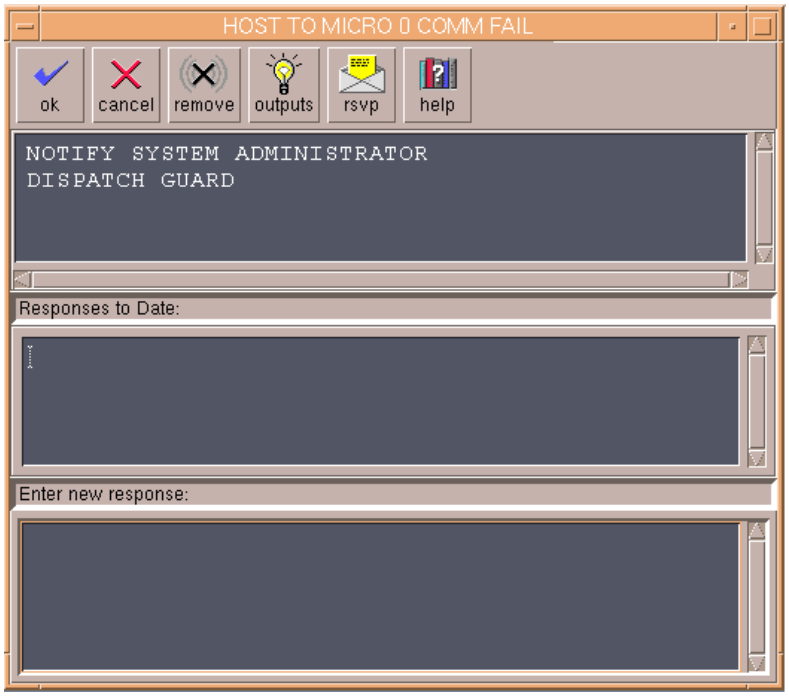


Figure 27-3. Alarm Response Window

Responding to An Alarm

The system allows the operator to respond to (acknowledge) alarms and to manually reset alarm outputs (if manual reset was selected using the **Alarms** form).

Pre-written alarm responses appear in the **Responses** picklist (Figure 27-4). When you select a response and clear the alarm, the system will archive the alarm record and the response. The pre-written response saves time. If none of the responses on the selection list are appropriate, the operator can type a unique response.

➤ **To respond to an alarm:**

1. Silence the alarm by clicking the **Silence** button on the **Alarm Alert** window.

2. Select **Monitors**, then **Alarm**.

3. Select the alarm. The **Alarm Response** window appears.

4. Optional: Click the **Outputs** button to toggle associated outputs on or off. See “Controlling Alarm Outputs” on page 27.8.

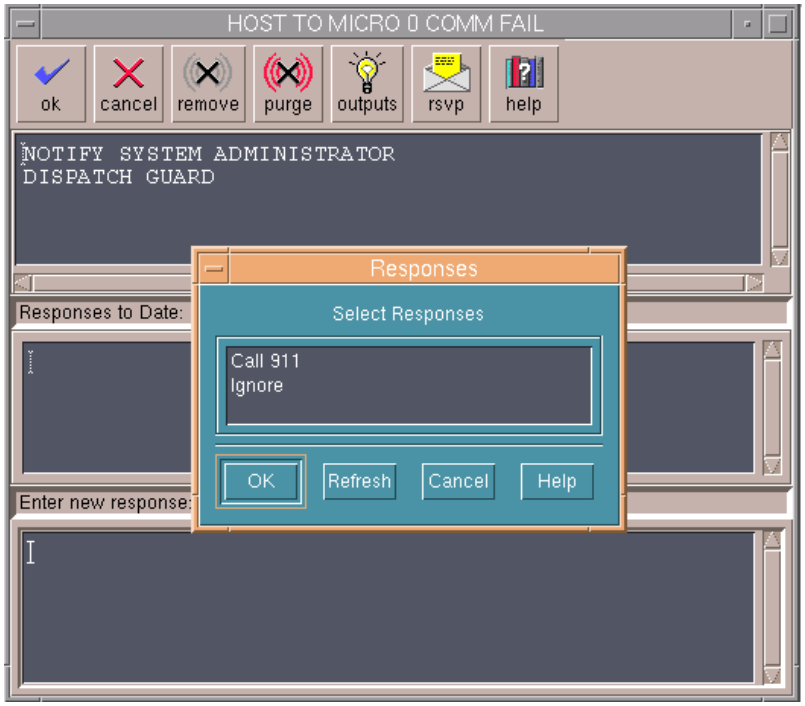


Figure 27-4. Alarm Response Window with Responses Picklist

5. Optional: Enter a response--either click the **RSVP** button to select from a list of alarm responses, or type a new response. When you click **Ok** in the **Response** picklist, the selected response appears in the **Enter New Response** box. The maximum length of a response is 255 characters. If the responses selected from the **Responses** picklist exceed this limit, a warning will pop-up indicating this (Figure 27-5) and the response will be truncated down to the maximum length. The response may then be edited in the **Enter New Response**: box to make the truncated response more presentable.

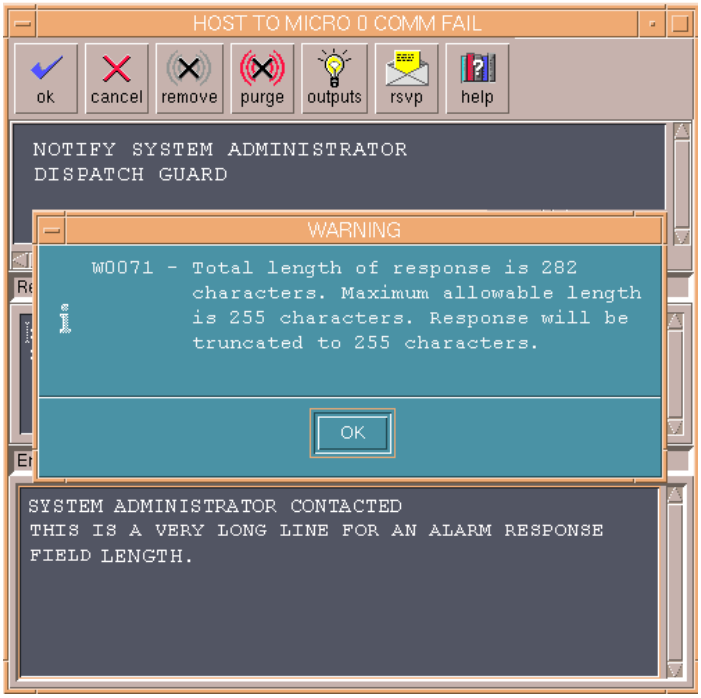


Figure 27-5. Alarm Response Window with Response Too Long Warning

6. Log the response.
   - To log the response without clearing the alarm, click **Ok**. You can continue to select this alarm again to enter new responses. The previous responses appear in the **Responses To Date** box (Figure 27-6).
   - To log the response and clear the alarm, click **Remove** on the **Alarm Response** window. See “Removing A Single Alarm” on page 27.6 and “Removing All Alarms” on page 27.7.

7. Optional: Click **Cancel** to close (exit) the window without altering the state of the alarm.

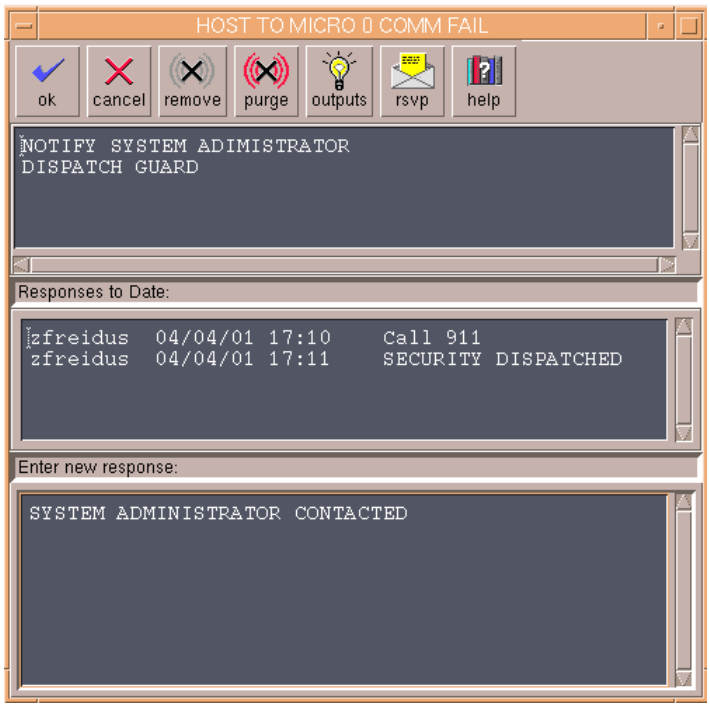


Figure 27-6. Alarm Response Window with Logged and New Responses

Removing A Single Alarm

To clear a single alarm that is in a reset condition, click the **Remove** button in the **Alarm Response** window. The system logs the alarm (and its responses) and deletes it from the **Alarm Monitor**.

NOTE

The **Alarm Response** window may now be configured to have the **Remove** function button unavailable unless the alarm is in reset state or has the alarm control **Immediate Reset Input** set (done on the **Devices**/**Alarm** form). The configuration is determined by the **Remove Alarm Only If Reset** parameter in the **Control**/ **Parameters** form. The default is **No**, indicating the **Remove** function button is always available. When set to **Yes**, the **Remove** function button will be grayed out when unavailable.

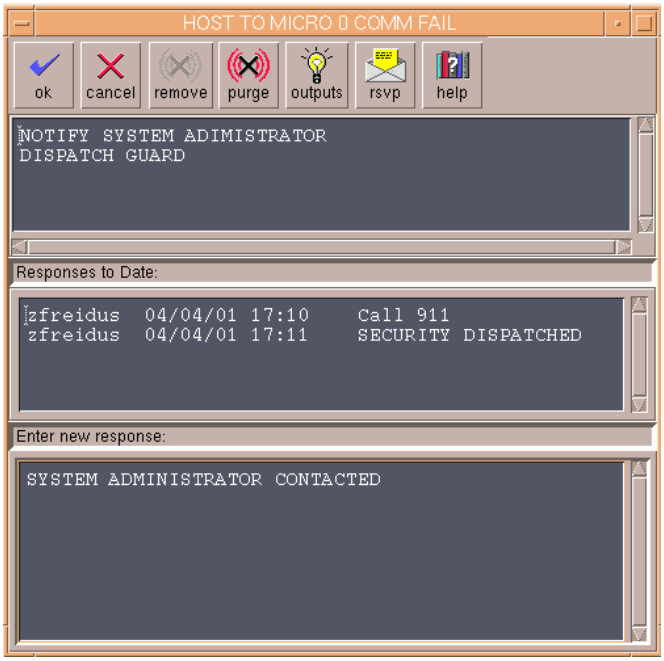


Figure 27-7. Alarm Response Window with Remove Function Disabled

Purging A Single Alarm

To clear a single alarm that is NOT in a reset condition, click the **Purge** button in the **Alarm Response** window, if available. The system logs the alarm (and its responses) and deletes it from the **Alarm Monitor**.

Removing All Alarms

If you are having hardware problems and need to clear alarms that will not reset, use the **Purge** button in the **Alarm Monitor**. The system logs the alarms and deletes them all from the monitor, even if they are not reset.

NOTE

An operator must have system permission to have access to the **Alarm Monitor Purge** button.

➤ **To remove all alarms from the Alarm Monitor:**

1. Click the **Purge** button located on the **Alarm Monitor** (not the **Alarm Response** window). The **Purge All Alarms** window appears (Figure 27-8).
2. Type the reason for clearing all alarms (for log records).
3. Click the **Ok** button in the **Purge All Alarms** window.

.

Figure 27-8. Purge All Alarms Window

Controlling Alarm Outputs

An alarm may have associated outputs that require manual reset. You can turn the entire output group on or off, or turn each individual output on or off. See “Chapter 29 - Controlling Outputs” for details on using the **Control Outputs** window.

➤ **To control alarm outputs:**

1. Click the **Outputs** button on the **Alarm Response** window to display the **Control Outputs** window (Figure 27-9).

2. Options:
   - Click a radio button to turn the entire output group on or off, then click **Ok**.
   - Or, to turn individual outputs on or off, click the **Output Group** button to display a listing of that group’s individual outputs. Each output has its own on / off radio buttons for your selection. If no selection is made, the outputs will retain their current settings. When the desired changes have been made, click **Ok**. Click **Ok** on the **Control Outputs** window to close it when you are done.

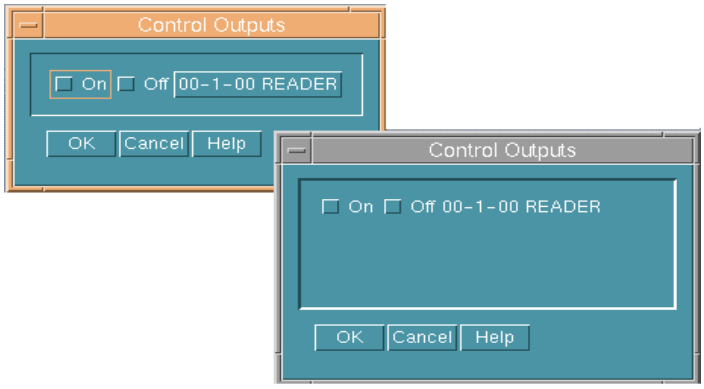


Figure 27-9. Control Outputs Window

Monitoring Activity

Chapter 28

Overview

Real-time activity displays in a scrolling window called the **Activity Monitor**. The queue of messages on the **Activity Monitor** scrolls upwards as new messages appear at the bottom. You can select whether you want to monitor badge, operator, tour, or swipe and show activity, or any combination of activities.

To temporarily stop the **Activity Monitor** from scrolling, click the **Freeze** button. The system continues to queue activity messages and will resume scrolling the stored information when you click the **Unfreeze** button.

To print the information that appears on the **Activity Monitor**, click the **Print** button.

To see all the columns on the **Activity Monitor**, stretch the window frame (use the point-and-drag method).

Prerequisites

The following Picture Perfect forms are prerequisites:

Forms	Purpose
PRINTER ROUTINGS TERMINALS	To log activity to a printer and display on a console.
PERMISSION GROUPS PERMISSIONS OPERATORS	To authorize operators to monitor activity.

What You Will Be Doing

This chapter shows you how to use the **Activity Monitor** to view badge, operator, tour, or swipe and show activity and to control what kinds of activities the **Activity Monitor** will display.

Badge Monitor

The **Activity Monitor** displays badge activity by default. Types of badge activities include the following:

VALID TRANSACTIONS

APB IN	A valid read occurred in an **Antipassback In** reader.
APB OUT	A valid read occurred in an **Antipassback Out** reader.
DEGRADED OPEN	A read occurred when an 8RP board was offline from the Micro/4 CPU.
OPEN	A valid read occurred in a **Normal** reader or a **Keypad** reader and the door was opened.
DURESS	A valid read occurred in a **Keypad** reader but was followed by a duress code. The door was opened.
OPEN SHUNT	The door was opened as part of an alarm shunting process.
PASSIVE APB IN	A badgeholder was granted access in two successive **APB IN** readers.
PASSIVE APB OUT	A badgeholder was granted access in two successive **APB OUT** readers.
SWIPE AND SHOW	A valid read occurred on a reader configured for **Swipe-and-Show**. This will be followed by another valid transaction, indicating how the transaction ended.
T & A IN	A valid read occurred in a **Time & Attendance In** reader.
T & A OUT	A valid read occurred in a **Time & Attendance Out** reader.
VALID DOOR LOCKED	In a **Double Badge** reader, the first badge read was valid but will not open the door until the second is validated.
VALID NO PASSAGE	A valid read occurred but the door was not opened
VALID TOGGLE	A valid read occurred in a **Toggle** reader which reversed the current state of the **Input Group**.
VALID FLOOR	A valid floor number was selected with **Elevator Reader/DI/DO** configuration.

INVALID TRANSACTIONS

AREA OFFLINE	The area was selected as offline.
BADGE DELETED	A deleted badge was used in a reader.
BADGE EXPIRED	An expired badge was used in a reader.
BADGE LOST	A lost badge was used in a reader.
BADGE SUSPENDED	A suspended badge was used in a reader.
BADGE UNKNOWN	An unknown badge was used in a reader.
INVALID APB IN	An invalid read occurred in an **APB IN** reader.
INVALID APB OUT	An invalid read occurred in an **APB OUT** reader.
INVALID CODE	The number entered was not a valid code for a **Shunt** or **Keypad** reader.
INVALID KR BDG	The badge used in a **Keypad** reader was not a keypad response badge.
INVALID PIN	The pin entered at the **Keypad** reader was invalid.
INVALID SHUNT	The shunt value was entered on a reader not enabled as a **Shunt** reader.
INVALID T & A IN	An invalid read occurred in a **T & A IN** reader.
INVALID T & A OUT	An invalid read occurred in a **T & A OUT** reader.
KR INVLD OPEN DR	A keypad response was given while the door was still open.
KR NOT ENABLED	A keypad response was given on a reader not enabled as a **Keypad** reader.
LEARN TIMEOUT	A badge was not learned by the micro within the set amount of time of 5 seconds.
NO CATEG MATCH	An invalid badge read occurred because the badgeholder's categories did not match one of the area's categories.
NOT VALIDATED	In a **Double-Badge** reader, the second badge read was not validated because the first was invalid.
READER OFFLINE	A read took place in an offline reader.
USAGE EXHAUSTED	The badgeholder's usage count for limited usage readers has been exhausted.
2ND BDG DOOR LOCK	A second valid read occurred before the door was opened for the first valid read. The door then locks.
INVALID FLOOR	An invalid floor number was selected with **Elevator**/ **Reader/DI/DO** configuration.

➤ **To view badge activity:**

1. Select **Monitors**, then **Activity**.

2. Click the **Outputs** button to display the **Monitor Control** pop-up window (Figure 28-1).

3. If not already selected, select **Badge Monitor** from the **Monitor Control** pop-up window.

4. Click **Ok**. Figure 28-2 shows an example of a badge activity message.

Figure 28-1. Activity Monitor Window with Monitor Control Picklist

```
B BADGE EXPIRED          10/31/02 17:24 EMP:1212          A      Smith
        RDR:1-1-009 2E LOBBY DOOR 2-1       AREA:BLD 1,2,3 LOBBIES
```

Figure 28-2. Example of a Badge Activity Message

The following is a description of each part of the activity message above:

B

Indicates badge activity

BADGE EXPIRED

The badge status.

01/28/93 09:10

Date and time the badge was read.

EMP:4

The badgeholder's employee ID.

A Smith

The badgeholder's initials and last name.

RDR: 1-1-009 2E LOBBY DOOR 2-1

The description of the reader that read this badge.

AREA: BLD 1,2,3 LOBBIES

The description of the area where the reader is located.

Operator Monitor

The system records operator activities, such as an operator changing the database or commanding the mode to change. The system can log this activity and the operator's ID. See "Display Flags" on page 4.30 of Chapter 4 - Initial Setup.

➤ **To view operator activity:**

1. Select **Monitors**, then **Activity**.
2. Click the **Outputs** button to display the **Monitor Control** pop-up window.
3. Select **Operator Monitor** from the **Monitor Control** pop-up window.
4. Click **Ok**. Figure 28-3 shows an example of an operator activity message.

```
O 10/31/02 17:24 OPR_EMP#0003        LOGIN ID:jeffm  ACTION:Update   TABLE:badge
     RECORD DESC:Roger, Falconbridge                  FIELD:state            VALUE:FL
```

Figure 28-3. Example of an Operator Activity Message

The following is a description of each part of the above activity message:

O

Indicates operator activity.

02/05/93 16:02

The date and time this record was updated or viewed.

OPR_EMP#0003

The operator employee number of the person who updated or viewed this record.

LOGIN ID:jeffm

The login name of the operator (**jeffm**) who updated or viewed this record.

ACTION:Update

Description of the activity performed by the operator. In this case, it was an **Update**.

TABLE: badge

The onscreen form (or table) that was viewed or updated. In this case, it was the **Badges** form.

RECORD DESC:Roger,Falconbridge

The description of the record viewed or updated. In this case, it was Roger Falconbridge's badge record.

FIELD: state

The field name (state) of the record that was changed on the form.

VALUE:FL

The change (FL) which was made in the field.

Swipe and Show Monitor

To enable the **Swipe And Show** function, the reader must be designated as **Authorization Required** or **Authorization Not Required** on the **Readers** form. The **Swipe And Show** button must be selected on the **Monitor Control** window from the **Activity Monitor** form (**Outputs** function button). The **Swipe And Show** button is visible on the **Monitor Control** window only when the **Image** package is installed in the system.

When properly configured, the **Activity Monitor** displays a photo when a valid badge read is received from a reader. The photo is imported from the photo database. For double badge transactions, the photo is displayed when the first swipe is detected, and the door is allowed to be unlocked when the second swipe is detected.

If **Authorization Required** is active, a dialog allows the operator to unlock the door or advises the operator why the door cannot be unlocked. If the door is allowed to be unlocked, the dialog includes an **Ok** button and a **Cancel** button. The **Ok** button unlocks the door and dismisses the dialog. The **Cancel** button dismisses the dialog, but does not unlock the door. If

the door is not allowed to be unlocked, the dialog only shows a **Close** button, which dismisses the dialog.

If the operator clicks the **Ok** button to unlock the door, the door strike output command event is recorded in operator history. Any invalid transaction denies the operator the option of unlocking the door.

The monitor is frozen while the photo is being displayed to allow the operator to read the text description of the transaction. The text description includes the name of the badge holder and the name of the reader where the transaction originated. If a photo cannot be displayed, a dialog advises the operator of the reason. This dialog includes a **Close** button to dismiss the dialog and free the **Activity Monitor**.

The **Save**, **Search**, and **Print** function buttons affect the contents of the window, but not the photo. The **New** function button clears the monitor window, but does not dismiss the photo. The **Freeze** function button freezes the monitor, but will not free the monitor while it is frozen by a photo. The monitor returns to normal when the operator dismisses the photo by clicking the **Close** box.

If **Authorization Not Required** is active, the photo will appear and the door will automatically unlock if this was a valid badge read.

If the **Auto Image Replace** option is enabled, the operator is not required to acknowledge each photo prior to displaying the next one.

➤ **To view swipe and show activity:**

1. Select **Monitors**, then **Activity**.
2. Click the **Outputs** button to display a pop-up window of **Monitor Controls**.
3. Select **Swipe And Show Monitor** from the **Monitor Control** window.
4. Click **Ok**. Figure 28-4 shows an example of a swipe and show activity message.

```
B SWIPE AND SHOW        10/31/02 17:20 EMP:1212          A     Smith
        RDR:1-1-009 2E LOBBY DOOR 2-1      AREA:BLD 1,2,3 LOBBIES
```

Figure 28-4. Example of a Swipe and Show Activity Message

The following is a description of each part of the activity message above:

B

Indicates badge activity

SWIPE AND SHOW

Indicates a **Swipe-and-Show** transaction.

01/28/93 09:10

Date and time the badge was read.

EMP:4

The badgeholder's employee ID.

A Smith

The badgeholder's initials and last name.

RDR: 1-1-009 2E LOBBY DOOR 2-1

The description of the reader which read this badge.

AREA: BLD 1,2,3 LOBBIES

The description of the area where the reader is located.

➤ **To enable and use the Auto Image Replace option:**

1. Change to the **/cas/db/text** directory by typing:
   cd /cas/db/text

2. Edit the file **auto_image_replace.cfg** located in the directory, changing the value of the two configuration values in the file. The values should be set according to the user's requirements:
   - **WantPhotoReplaced**
     Indicates whether or not you want to use the auto-image replacement feature.

     0 - The default case. Indicates that you do NOT want to use the feature.
     1 - Indicates that you DO want to use the auto-image replacement feature.

   - **MinMilliSecsImageDisplay**
     Indicates the minimum delay period for the image to display, in milli-seconds, when the image is being piped into the **showimage** program from **stdin**. When used with auto-image replacement on Swipe-and-Show, 500 milli-seconds is recommended, to ensure the image is seen before the next one replaces it, in a high badging rate scenario. This setting may need to be adjusted depending on the capabilities of the computer.

   To use the feature, the recommended settings are as follows:

WantPhotoReplaced 1
MinMilliSecsImageDisplay 500

3. Save the file, with the new settings.

4. To begin using the feature:
   - If the **Activity Monitor** was already opened, it will need to be closed, and a new copy opened, so that the configuration file can be re-read.
   - If the **Activity Monitor** is not already opened, open a copy from the Picture Perfect Main Menu.

5. Select the **Swipe and Show Monitor** option from the **Outputs** menu on the **Activity Monitor**, and the auto-image replace functionality should now be enabled, as badges are swiped on the designated Swipe-and-Show reader.

NOTES

Controlling Outputs

Chapter 29

Overview

Outputs are devices that can turn on or off due to an input condition or operator intervention. An authorized operator can turn outputs on or off using the **Control Outputs** function for the duration of **Time** entered on the **Output** form.

Prerequisites

The following Picture Perfect forms are prerequisites:

Form	Purpose
INPUT GROUPS INPUTS	To allow inputs to activate (in groups) when an alarm condition occurs.
OUTPUT GROUPS OUTPUTS	To allow outputs to trigger (in groups) when associated inputs activate.

What You Will Be Doing

This chapter shows you how to select the outputs you want to control through input groups, output groups, or individual outputs.

If you select **Input Groups**, **Output Groups** or **Outputs** from the **Control Outputs** form (Figure 29-1), a picklist appears where you select a single input group, output group or output. Clicking on the corresponding icon brings up the associated output group or output with radio buttons for turning all outputs in the group on or off. If you want to turn single outputs in the group on or off, click the **Group** button to display a picklist where you can use radio buttons to turn individual outputs on or off.

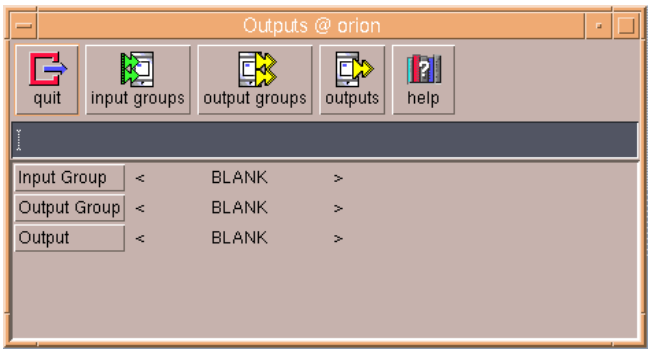


Figure 29-1. Control Outputs Form

If you select **Outputs** from the **Control Outputs** form, a picklist appears where you can select an individual output to turn on or off.

NOTE Each transaction is recorded in operator history.

Controlling an Output from an Input Group

When you select an input group and click the **Input Group** button, a window displaying all associated output groups will appear. You can then trigger all the outputs associated with each output group displayed, or you can trigger individual outputs associated with a selected output group. (This does not generate an alarm.) See Figure 29-2. "Progression of Windows in Control Outputs Form" on page 29.4.

➤ **To control an Output from an Input Group:**

1. Log in as an operator with permission to control outputs.

2. Select **Control**, then **Outputs**.

3. Click the **Input Group** button to display a picklist of input groups. Select the desired input group, then click **Close**.

4. Click the **Input Groups** icon.

5. A window displaying buttons of each output group associated with that input group will appear. Beside each **Output Group** button are on / off radio buttons.
   - Use the appropriate radio button for each output group to either turn on or off all of the outputs in that group, then click **Ok**.

- To turn *individual* outputs in a selected output group on or off, click the button displaying the name of the desired output group to display another window. This window lists the outputs of that group individually, with separate on / off radio buttons for each. Use the appropriate radio button for each output, then click **Ok**.

Controlling an Output from an Output Group

When you select an output group and click the **Output Groups** button, a window displaying that output group appears. You can then trigger all the outputs associated with that output group, or you can trigger individual outputs associated with it. (This does not generate an alarm.) Figure 29-2 shows the progression of windows from the **Control Outputs** form.

NOTE The output is turned on for the time specified in the output's duration field.

➤ **To control an Output from an Input Group:**

1. Log in as an operator with permission to control outputs.
2. Select **Control**, then **Outputs**.
3. Click the **Output Group** button to display a picklist of output groups. Select the desired output group, then click **Close**.
4. Click the **Output Groups** icon.
5. A window displaying buttons for that output group appears. Selecting the **Output Group** button will display all associated outputs. Beside each **Output** button are on / off radio buttons.
   - Use the appropriate radio button to either turn on or off all of the outputs in that group, then click **Ok**.
   - To turn individual outputs in a selected output group on or off, click the button displaying the name of the output group to display another window. This window lists the outputs of that group individually, with separate on / off radio buttons for each. Use the appropriate radio button for each output, then click **Ok**.

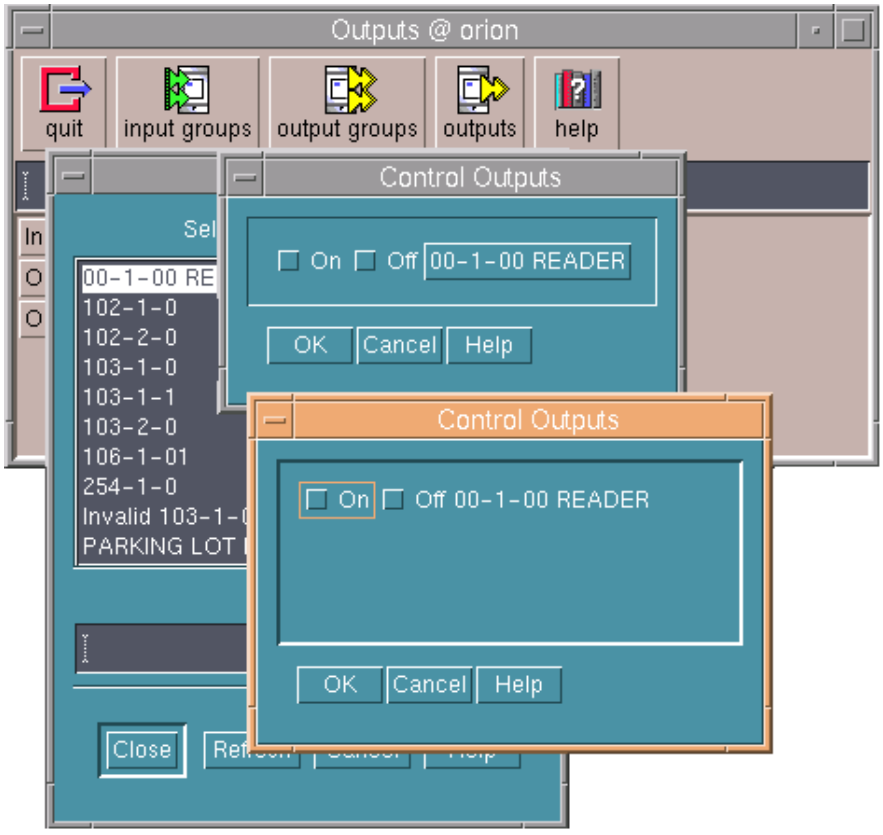


Figure 29-2. Progression of Windows in Control Outputs Form

Controlling an Individual Output

When you turn an output on or off, this triggers the individual output.

NOTE The output is turned on/off for the time specified in the output's duration field.

➤ **To control an individual Output:**

1. Log on as an operator with permission to control outputs.
2. Select **Control**, then **Outputs**.
3. Click the **Output** button to display a picklist of outputs.

4. Select an individual **Output** from the picklist and click **Close**. Click the **Outputs** icon. A window appears with on/off radio buttons next to the output name.

5. Turn the individual output on or off and click **Ok**. Or, if you have selected the wrong output, click **Cancel**.

NOTES

Viewing Status

Chapter 30

Overview

The **Status** function lets you see a micro's current operating characteristics (status) for its areas, categories, readers, doors, inputs, input groups, outputs, output groups, alarms, modes, elevators, category floors and / or version. You can also view the status of an area's readers and / or doors.

Scheduled events change the micro database and can also be used to update the host database. The **Status** function allows the operator to see the database in the **Micro** in real time to see any changes the scheduler has made.

Prerequisites

The following Picture Perfect forms are prerequisites:

Form	Purpose
MICROS	Micros must be defined, online, and operating.
AREAS	Areas must be defined and enabled.
READERS	Readers must be defined, enabled, and online.
DOORS	Doors must be defined, with either sensing or monitoring enabled, a door sensor input assigned, and an area assigned.

What You Will Be Doing

You will use the **Status** form to specify an **Activity Monitor** to view the operating status of selected components (such as readers, doors, areas, or inputs). You must first select to view by micro or by area.

Viewing Status By Micro

➤ **To View Status by Micro:**

1. Select **Status**, then **Status**. The **Status** form (Figure 30-1) appears.

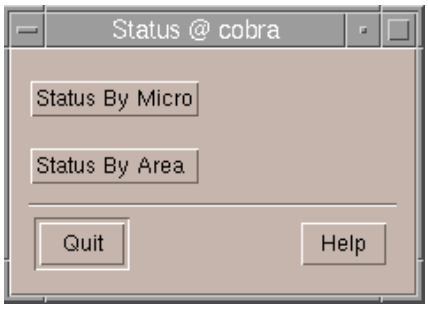


Figure 30-1. Status Form

2. Click the **Status By Micro** button to display a picklist of micros. Select a micro, then click **Ok**. A **Status** window (Figure 30-2) appears.

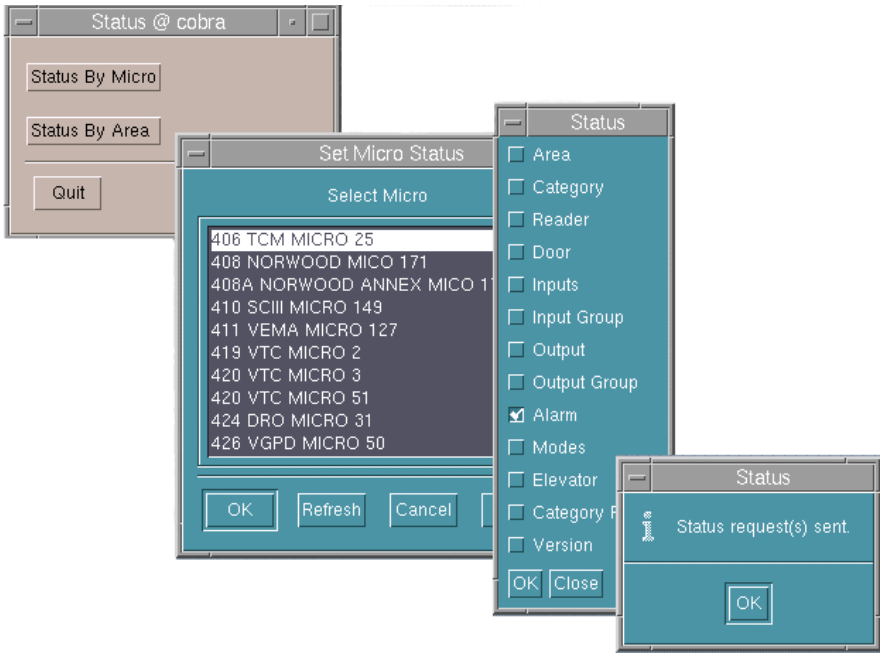


Figure 30-2. Progression of Windows for Status by Micro

3. Select one or more of the items in the **Status** window, then click **Ok**. A message appears in a **Status Request** pop-up window informing you that your status requests have been sent.

4. Click **Ok** on the **Status Request** pop-up and wait for the **Activity Monitor** to appear displaying the selected data, which begins to scroll. Click the **Freeze** button to stop the scrolling action, and use the scroll bar to view data that has scrolled off the window.

Viewing Status By Area

➤ **To view Status by Area:**

1. Select **Status**, then **Status**. The **Status** form appears.

2. Click the **Status By Area** button to display a picklist of areas. Select an area, then click **Ok**. A **Status** window (Figure 30-3) appears.

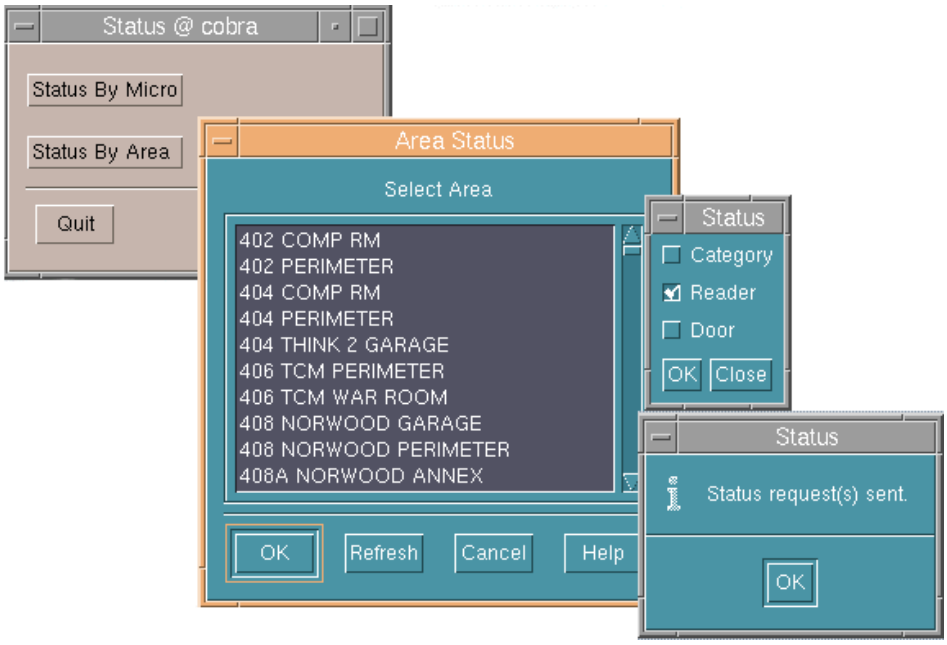


Figure 30-3. Progression of Windows for Status by Area

3. Select one or more of the items in the **Status** window, then click **Ok**. A message appears in a **Status Request** pop-up window informing you that your status requests have been sent.

4. Click **Ok** on the **Status Request** pop-up and wait for the **Activity Monitor** to appear displaying the selected data, which begins to scroll. Click the **Freeze** button to stop the scrolling action, and use the scroll bar to view data that has scrolled off the window.

NOTE

You can also receive status information by selecting **Status** from the **cmenu** or from the command line by typing **statuscmd**. The command **statuscmd** is the only option where badge status information can be viewed.

Viewing Status by Door

➤ **To View Door Status:**

1. Select **Status**, then **Status**.
2. Select **Status By Micro**.
3. Select the desired micro from the picklist.
4. Select the desired door.

The following is a sample of the door status reported by the micro.

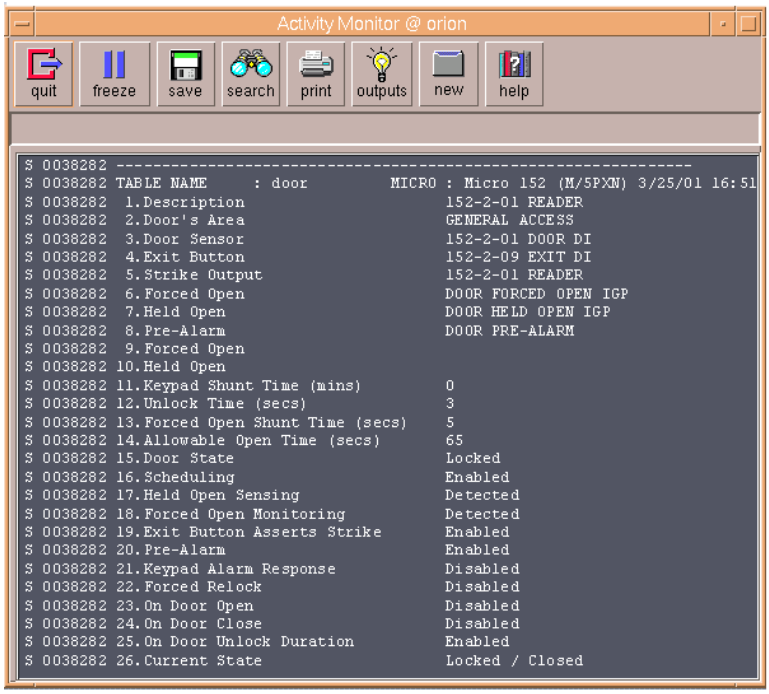

Activity Monitor @ orion
quit
freeze
save
search
print
outputs
new
help
S 0038282 TABLE NAME : door MICRO : Micro 152 (M/5PXN) 3/25/01 16:51
S 0038282 1.Description 152-2-01 READER
S 0038282 2.Door's Area GENERAL ACCESS
S 0038282 3.Door Sensor 152-2-01 DOOR DI
S 0038282 4.Exit Button 152-2-09 EXIT DI
S 0038282 5.Strike Output 152-2-01 READER
S 0038282 6.Forced Open DOOR FORCED OPEN IGP
S 0038282 7.Held Open DOOR HELD OPEN IGP
S 0038282 8.Pre-Alarm DOOR PRE-ALARM
S 0038282 9.Forced Open
S 0038282 10.Held Open
S 0038282 11.Keypad Shunt Time (mins) 0
S 0038282 12.Unlock Time (secs) 3
S 0038282 13.Forced Open Shunt Time (secs) 5
S 0038282 14.Allowable Open Time (secs) 65
S 0038282 15.Door State Locked
S 0038282 16.Scheduling Enabled
S 0038282 17.Held Open Sensing Detected
S 0038282 18.Forced Open Monitoring Detected
S 0038282 19.Exit Button Asserts Strike Enabled
S 0038282 20.Pre-Alarm Enabled
S 0038282 21.Keypad Alarm Response Disabled
S 0038282 22.Forced Relock Disabled
S 0038282 23.On Door Open Disabled
S 0038282 24.On Door Close Disabled
S 0038282 25.On Door Unlock Duration Enabled
S 0038282 26.Current State Locked / Closed

Figure 30-4. Sample Door Status

The following is an explanation of the information provided by the **Door Status**.

1. Description

Description of the door found in the database.

2. Door's Area

Area to which the door belongs.

3. Door Sensor

The input associated with the door sensor for this door.

4. Exit Button

The input associated with the exit button for this door.

5. Strike Output

The output associated with the strike output for this door.

6. Forced Open

The input group associated with the forced open input group for this door.

7. Held Open

The input group associated with the held open input group for this door.

8. Pre-Alarm

The input group associated with the pre-alarm input group for this door.

9. Forced Open

Not Applicable.

10. Held Open

Not Applicable.

11. Keypad Shunt Time (mins)

The keypad shunt time associated with this door.

12. Unlock Time (secs)

The unlock time associated with this door.

13. Forced Open Shunt Time (secs)

The forced open shunt time associated with this door.

14. Allowable Open Time (secs)

The allowable open time associated with this door.

15. Door State

The door state associated with this door.

16. Scheduling

States whether the **Scheduling** field is enabled on the **Doors** form.

17. Held Open Sensing

States whether the **Held Open Sensing** field is selected on the **Doors** form.

18. Forced Open Monitoring

States whether the **Forced Open Monitoring** field is selected on the **Doors** form.

19. Exit Button Asserts Strike

States whether the **Exit Button Asserts Strike** field is enabled on the **Doors** form.

20. Pre-Alarm

States whether the **Pre-Alarm** field is enabled on the **Doors** form.

21. Keypad Alarm Response

States whether the **Keypad Alarm Response** field is enabled on the **Doors** form.

22. Forced Relock

States whether the **Forced Relock** field is enabled on the **Doors** form.

23. On Door Open

States whether the **On Door Open** field is enabled on the **Doors** form.

24. On Door Close

States whether the **On Door Close** is enabled on the **Doors** form.

25. On Door Unlock Duration

States whether the **On Door Unlock Duration** is enabled on the **Doors** form.

26. Current State

There are two values in this field. The first is the current state of the door which in Figure 30-4 is Locked. The second value is the current state of the door DI which is Closed in Figure 30-4.

User Customization

Chapter 31

Overview

The **User Customization Tool** provides a Motif-based user interface for customizing **Badge** and **Department** table fields. These fields are used in the **Access**/**Badges** and **Access**/**Departments** screens. Not all badge and department fields can be customized; only those whose database names start with “User” or “Address”.

Application points of this feature are shown in Figure 31-1, Figure 31-2, and Figure 31-3.

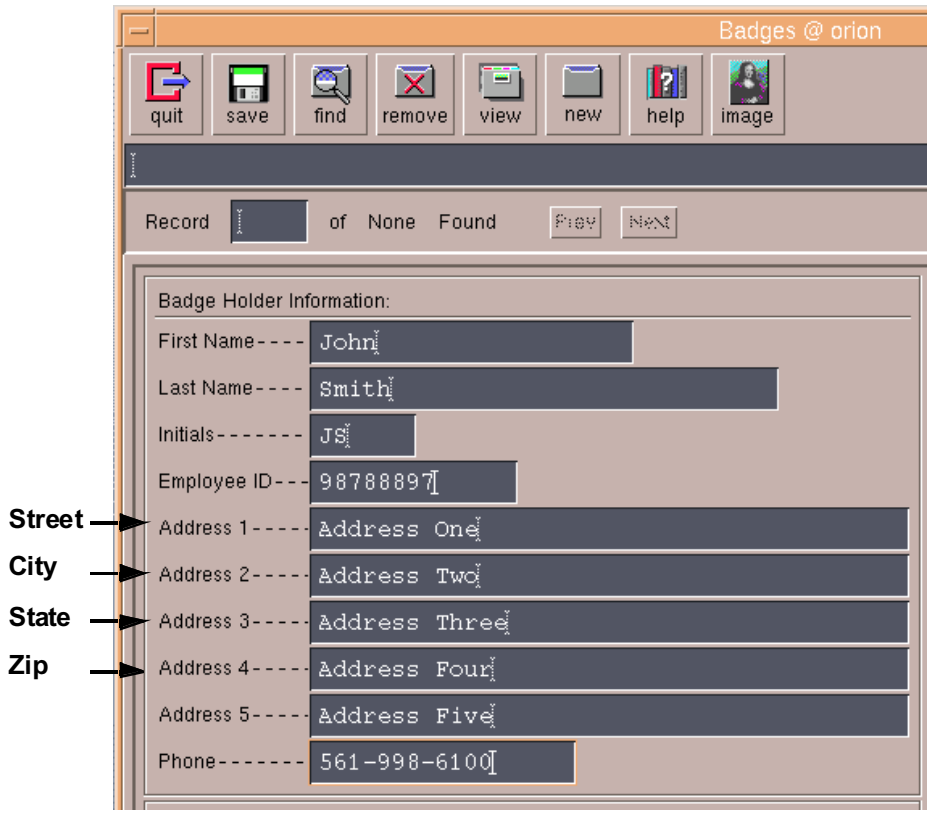


Figure 31-1. Badge Holder Customization

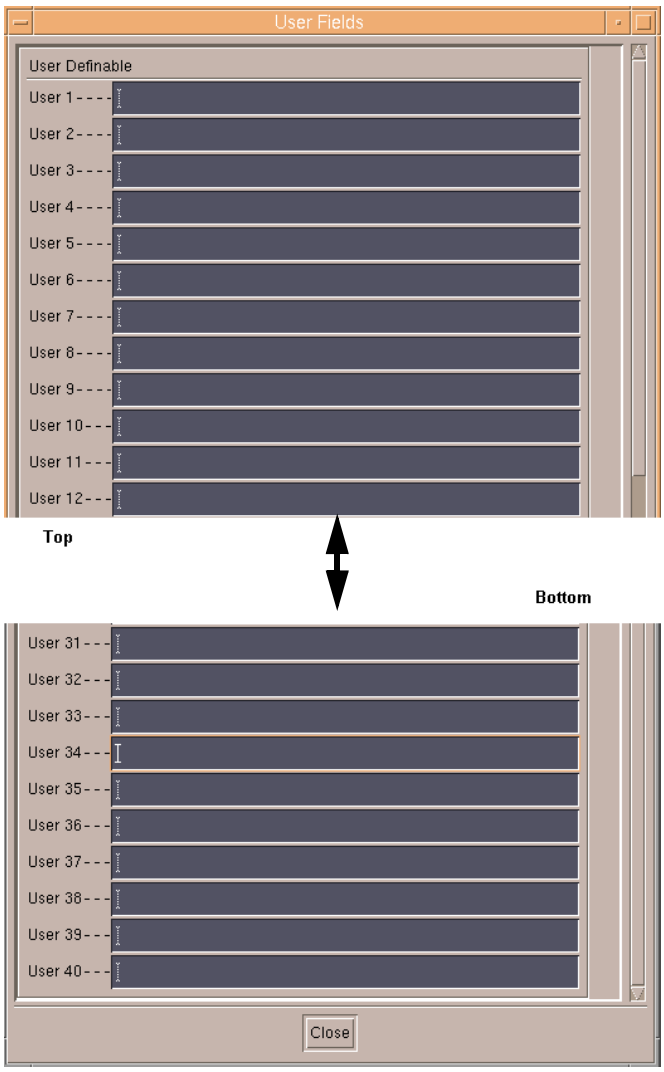


Figure 31-2. User Fields Window from Badges Form

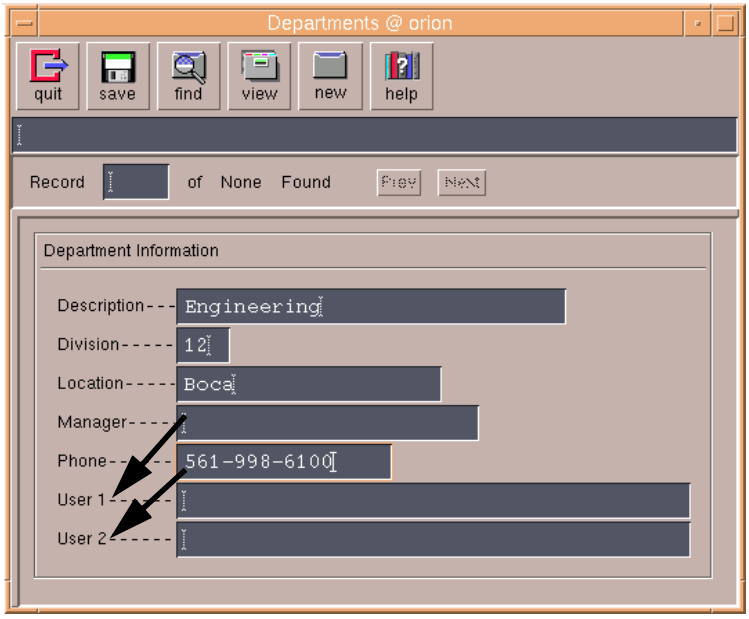


Figure 31-3. User Fields in Departments Form

When the fields are customized, they are immediately updated in the database so they can be viewed the next time the screen is activated. The customizations are also written to the language's **meaning.dat** file. This file is located in a subdirectory of **/cas/nls/src** which has the same name as the language's locale. Writing the changes to **meaning.dat** ensures that they will be preserved during patches and upgrades.

Invocation

NOTE You must have root permission to use this tool.

➤ **To invoke the User Customization Tool:**

1. Bring up a new window.
2. If you did not login as **root**, change to **root** permission by typing: **su root**
3. Type: **. /cas/bin/profile**
4. To invoke the tool, type: **usrcst**
   Note that **usrcst** does not take any arguments.

User Interface

Main Window

The main **User Customization** window (Figure 31-4) is the focal point of user activity. Its components are described below.

Menu Bar

The menu bar contains three buttons: **Exit**, **Save**, and **Help**.

Exit Button
Select this button to exit the application. When unsaved customizations exist, a dialog is activated which prompts the user as to whether or not the changes should be saved. The user can select **Yes** to save the changes and exit, select **No** to exit without saving the changes, or select **Cancel** to cancel the attempt to exit.

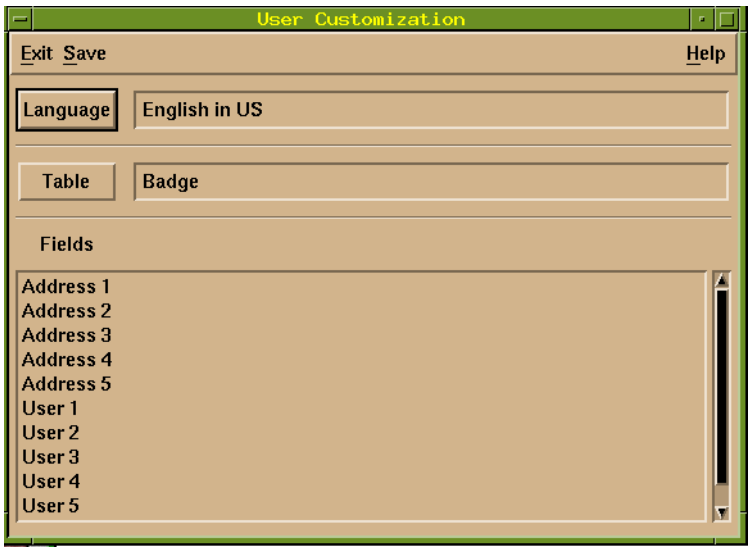


Figure 31-4. User Customization Window

Save Button
Select this button to save customizations. If the save fails, an error dialog will be activated describing the error.

Help Button
Select this button to view on-line help information describing the tool.

Language Button and Box

Select the **Language** button to change the current language. Selecting the button activates the **Language Selection** dialog which controls the actual changing of the language.

If you have made changes to this screen and then select another language, a window will appear asking you whether to save the changes made before changing the language. Selecting **Yes** will save the changes and then change the language, selecting **No** will cancel the changes and then change the language and selecting **Cancel** will cancel the change to another language.

The box adjacent to the language button displays the current language.

Table Button and Box

Select the **Table** button to change the current table. Selecting the button activates the **Table Selection** dialog which controls the actual changing of the table.

If you have made changes to this screen and then select another language, a window will appear asking you whether to save the changes made before changing tables. Selecting **Yes** will save the changes and then change tables, selecting **No** will cancel the changes and then change tables and selecting **Cancel** will cancel the change to another table.

The box adjacent to the table button displays the current table.

Fields List

The **Fields** list displays the fields that can be customized for the current language and table. Double clicking on any item in the list activates the **Field Edit** dialog which controls the customization of the field. The items in the list are presented in alphabetical order.

Language Selection Dialog

The **Language Selection** dialog shown in Figure 31-5 controls changes to the current language. The list contains only those languages that are installed on a system and for which the user has write permission to the language's **`meaning.dat`** file.

Figure 31-5. Language Selection Dialog

➤ **To select a language:**

1. Either click on it in the list or typing its name in the **Selection** box.

2. Select **Ok** to change the current language to the selection. This also deactivates the dialog.

3. Select **Apply** to change the current language to the selection. This leaves the dialog active.

4. Select **Cancel** to exit the dialog without changing the current language.

5. Select **Help** to view on-line help about the dialog.

Table Selection Dialog

The **Table Selection** dialog shown in Figure 31-6 controls changes to the current table. The list contains only those tables that can be customized.

Figure 31-6. Table Selection Dialog

➤ **To select a table:**

1. Either clicking on it in the list or typing its name in the **Selection** box.
2. Select **Ok** to change the current table to the selection. This also deactivates the dialog.
3. Select **Apply** to change the current table to the selection. This leaves the dialog active.
4. Select **Cancel** to exit the dialog without changing the current table.
5. Select **Help** to view on-line help about the dialog.

Change Field Dialog

The **Change Field** dialog shown in Figure 31-7 controls customization of the current field.

Figure 31-7. Change Field Dialog

The **Database Name** box contains the current field's name as it appears in the database. This name does not change.

The **Old Name** box contains the current field's present name.

The **New Name** box allows the user to edit the name.

1. Select **Ok** to change the field name to the string in **New Name** box. This also deactivates the dialog.

2. Select **Apply** to change the field name to the string in the **New Name** box. This does not deactivate the dialog. Selecting another field in the **User Fields** list will load the **Old Name** and **New Name** boxes with that field's name and allow customization of that field without having to activate the dialog again.

3. Select **Cancel** to exit the dialog without changing the current field.

4. Select **Help** to view on-line help about the dialog.

National Language Support

Chapter 32

Overview

This chapter describes Picture Perfect's **National Language Support** (NLS) which allows operators to view text and enter data in their native language.

Picture Perfect supports multiple languages at a single installation. Each operator is restricted to a single language, but different operators can use different languages. For example, one operator can work in English while another works in Spanish, and yet another works in French. Each operator is restricted to a single language at a time, but they can change languages. For example, the English operator can switch to Spanish.

Limitations

Picture Perfect supports English, French, Spanish, Danish, German, Finnish, Icelandic, Italian, Dutch, Norwegian, Portuguese, Swedish, and Italian. Of these languages, only English, French, Spanish, Portuguese, and Italian text are provided by GE Interlogix, CASI. Users must translate the English text into another supported language before that language can be used.

All items available from the main Picture Perfect menu support NLS. Not all Picture Perfect utilities support NLS; some facilities intended for system administrators are restricted to English. Examples of English-only utilities are **`ppinstall`**, **`dpc`**, **`cmenu`**, **eFlash** and the log files.

Picture Perfect uses a single language for alarm notification, and archive notification. This language is called the *primary* language and can be selected by the system administrator. An operator using a language different from the primary language will view the notifications in the primary language.

Picture Perfect does not translate data entered by operators. For example, an alarm description entered in French is viewed by all other operators in French, regardless of what language they are working with. The text contained in default database records provided by GE Interlogix, CASI can be translated. An example is the **All Categories** category record.

Installation

During installation, NLS support is automatically installed for the **Base**, **Tours**, **Image**, and **Alarm Graphics** packages. When installation is complete, the primary language is English (the default language), and the install operator (default System Administrator ID) is defined to work in English.

To enable usage of any of the other provided languages (Spanish, French, Portuguese or Italian), they must be installed as follows:

1. Insert the Picture Perfect CD-ROM drive.

2. Log in as **root**.

3. From a command prompt, open a terminal window.

   Result: You should see a # prompt.

4. Type the following to shut down Picture Perfect:

   `. /cas/bin/profile` Enter

   `rc.pperf -k` Enter

5. Mount the CD-ROM by typing the following:

   AIX

   `mntCD` Enter

   `or`

   `mount -v cdrfs -o ro /dev/cd0 /mnt` Enter

   Linux

   `mount /dev/cdrom` Enter

6. Start the installation by typing the following:

   AIX

   `/mnt/INSTALL -l (the letter "l", not the numeral "1")`

   Linux

   `/mnt/cdrom/INSTALL -l (the letter "l", not the numeral "1")`

   Result: Messages similar to the following, followed by a list of the available language packages, will appear on the screen:

```
Picture Perfect CD-ROM Installation - 1.16 2/7/02

Copyright (C) 2000-2002 CASI-RUSCO
```

```
The following LANGUAGE_EXT product(s) are available:

Prod #  Name and Descriptions
------  ---------------------

0       french        French in France Language Extension
1       italian       Italian in Italy Language Extension
2       portuguese    Portuguese in Brazil Language Extension
3       spanish       Spanish in Spain Language Extension

Enter product number(s), separated by ',' to select, 'q'  to
quit:
```

7. Type the numbers of the language products to be installed, separated by a comma.

   Result: Your package selection will be displayed, and you will be asked to confirm:

```
You have selected the following product(s):

3    spanish       Spanish in Spain Language Extension

Is this correct (y/n)? [y]
```

8. To make a different selection, type **n**, and you will be returned to step 6 of the installation, where you will be prompted again for your language selections. To continue the installation, press Enter to accept the default (**y**).

   Result: The installation will begin, and messages similar to the following will appear on the screen:

```
Installing spanish...

Picture Perfect Multi-package Installation - 1.14 2/7/02

Copyright (C) 1991 thru 2002  CASI-RUSCO


Installing from image in /mnt/pp ...

200 blocks


Do you want to install the Picture Perfect SPANISH Package (y/
n)? [y]
```

9. To continue the installation, press Enter to accept the default (**y**).

   Result: You will see messages similar to the following, as the selected language is installed:

```
Installing spanish...
Picture Perfect Multi-package Installation - 1.14 2/7/02
Copyright (C) 1991 thru 2002  CASI-RUSCO

Installing from image in /AIX17CD/pp ...
200 blocks

Do you want to install the Picture Perfect SPANISH Package (y/
n)? [y]

Checking if need to save nls or help files...

Picture Perfect NLS Text Save - 1.16 1/19/01
Copyright (C) 1994-2001 CASI-RUSCO

Tue Mar 19 17:08:21 EST 2002

Saving nls files ...
Saving nls files in /cas/nls/src/en_US ...
Saving nls files in /cas/nls/src/en_US/.devel ...
Saving help files ...
Saving help files in /cas/help/en_US ...
Saving help files in /cas/help/en_US/.devel ...

NLS Text Save Finished

Picture Perfect SPANISH Installation - Version 2.0 2/4/02
Copyright (C) 2001-2002 CASI-RUSCO, Inc

Making directories which are not present
making //cas/help/es_ES
making //cas/help/es_ES/index
making //cas/nls/cat/es_ES
making //cas/nls/src/es_ES
making //cas/app-defaults/es_ES
All es_ES directories are present
Record has correct availability.

Reading spanish files from media. Please wait...
Extracting files from media...
18600 blocks

The files have been read from the media.

Shutting down the Informix database. Done.
The 'SPANISH.INST' installation has completed successfully.
Checking if need to update nls files...
Picture Perfect NLS Check - 2.0 1/19/01
```

```
Copyright (C) 1997-2001 CASI-RUSCO

Tue Mar 19 17:09:21 EST 2002

Updating nls files...
Picture Perfect NLS Text Update - 1.32 2/5/02
Copyright (C) 1994-2001 CASI-RUSCO

Tue Mar 19 17:09:22 EST 2002

Comparing nls files in /cas/nls/src/en_US/.devel ...
Updating nls files in /cas/nls/src/en_US ...
Comparing nls files in /cas/nls/src/es_ES ...
Updating nls files in /cas/nls/src/es_ES ...
Comparing help files in /cas/help/en_US/.devel ...
Updating help files in /cas/help/en_US ...

Comparing help files in /cas/help/es_ES ...
Updating help files in /cas/help/es_ES ...
Building en_US ...
Building es_ES ...
Loading meaning table ...

NLS Text Update Finished

Running /cas/bin/fixperm on /tmp/spanish.perm file...
No errors detected

/cas/bin/fixperm finished.

Installing LANGUAGE_EXT product(s) was successful.

The INSTALLation has completed.
The system needs to be rebooted for the changes to take effect.

Reboot the system (y/n)? [y]
```

10. Remove your installation media before pressing Enter (defaults to **y**).

Additional languages can be made available. The primary language and the install operator's language can be changed. However, before any of these changes can be made, any languages, other than the provided ones (Spanish, French, Portuguese, and Italian) must be translated.

Language Translation

The English text provided by GE Interlogix, CASI can be translated into any of the supported languages. The English, French, Spanish, Portuguese, and Italian text can be modified as well. This means that an installation can translate GE Interlogix, CASI's English terminology into its own English terminology.

The steps to language translations are:

1. Create text that can be translated.

2. Translate the text.

3. Install the translations.

4. Make the text available for operators.

Subsequent changes to a language's translation only requires steps 2 and 3. Make the change in the translated text and then re-install the translations.

Locale

Locale is defined as a language and the location in which it is used. All languages in Picture Perfect are defined in terms of locale. Each language has a unique locale identifier. Picture Perfect uses the locale identifiers defined by the vendor supplied operating system. The supported locales and their identifiers are defined in the following table:

Table 32-1: Language Locale Names

Language Description	Locale Name
AA="Arabic Area"	ar_AA
English in United States.	en_US
French in France.	fr_FR
Spanish in Spain.	es_ES
Danish in Denmark	da_DK
German in Switzerland	de_CH
German in Germany	de_DE
English in Great Britain	en_GB
Finnish in Finland	fi_FI
French in Belgium	fr_BE
French in Canada	fr_CA
French in Switzerland	fr_CH

Table 32-1: Language Locale Names (Continued)

Language Description	Locale Name
Icelandic in Iceland	is_IS
Italian in Italy	it_IT
Dutch in Belgium	nl_BE
Dutch in Netherlands	nl_NL
Norwegian in Norway	no_NO
Portuguese in Brazil	pt_BR
Portuguese in Portugal	pt_PT
Swedish in Sweden	sv_SE
Hebrew in Israel	iw_IL
Korean in Korea	ko_KR

NOTE Remember to use the proper locale name for the operating system installed at your site.

Preparing for Translation

Each language stores its text in unique subdirectories under **/cas/nls/src** and **/cas/help**. The subdirectory names are the same as the language's locale identifier. For example, in an AIX environment, English text is in **/cas/nls/src/en_US** and **/cas/help/en_US**; French text is in **/cas/nls/src/fr_FR** and **/cas/help/fr_FR**.

English, French, Spanish, Portuguese, and Italian subdirectories contain a subdirectory called **.devel**. This subdirectory holds the text as provided by GE Interlogix, CASI. Do not change the **.devel** subdirectory or its contents. Doing so will make it impossible for a patch or upgrade to correctly modify text. Translations should only be made in the language's base directory. Also, do not add a **.devel** directory to any language directory not provided by GE Interlogix, CASI.

The **createlang** command creates language subdirectories and copies English text into the subdirectories. Note that it copies the English text provided by GE Interlogix, CASI; it does not copy any local modifications that may have been made to English. Invoking **createlang** requires **root** permission. Its calling convention is:

createlang ***locale orientation***

where: **locale** is the locale identifier of the language being created.

orientation is the direction from which the language is read. It is left for left-to-right languages such as English. To create text for Swedish translation, enter:

```
createlang sv_SE left
```

Do not use **createlang** with locales that have already been created. Doing so will replace that language's source text files with English. This could result in the loss of translated text. Only the locale for English in US (**en_US**), is created during base package installation.

Translating Text

Picture Perfect text is divided into four types: help information, database synonyms, default database, and catalogs. A crucial concern in translating text is the code page used in the translation. The code page specifies the character encoding. All translations should be made with the ISO8859-1 code page which is used by Picture Perfect. The only other acceptable code page is the IBM-850, which is normally found on personal computers. Translations made in IBM-850 can be converted to ISO8859-1 with the AIX *iconv* utility.

Database Synonyms

Database Synonyms are synonyms for database tables, fields, and values used to describe the database to operators. They are also called meanings.

The synonyms for a particular language are stored in a file named **meaning.dat** in **/cas/nls/src/*LOCALE*** where ***LOCALE*** is the language's locale identifier. Each line in **meaning.dat** defines a distinct synonym. The lines are separated into three to four fields (as numbered in the example below) separated by bars (|). The third field is the actual synonym and is the only field that can be changed; changing the first and second fields will corrupt the database. The third field must not contain more than 60 alphanumeric characters. The fourth field is optional. When present, it will always contain a capital **T**. Its presence indicates that the field needs translation. This field should be removed when the record is translated. Only "**T|**" is removed; the records must always end with a bar.

An example of a **meaning.dat** synonym definition is:

```
1  2       3       4

33|2|Alarm Monitors|T|
```

Only the words "**Alarm Monitors**" can be changed, and the translation must not exceed 60 alphanumeric characters. The french translation is:

```
33|2|Moniteur d'alarmes|
```

Help Information

Help information aids operators in understanding the system.

Help information for a particular language is stored in files located in **/cas/help/*LOCALE*** where ***LOCALE*** is the language's locale identifier. The help files are in HTML format and cannot be translated.

Default Database Text

Default Database Text is text contained in records within the minimum database.

The default database text for a particular language is stored in files named **base_ddb.dat** and **tour_ddb.dat** located in **/cas/nls/src/*LOCALE*** where ***LOCALE*** is the language's locale identifier. The file **base_ddb.dat** contains default database text for the **Base** package and will be present on all installations. The file **tour_ddb.dat** contains default database text for the **Tour** package and will only be present when the **Tour** package is installed.

Each line in the files defines text for a minimum database record. The lines are divided into six to seven fields separated by bars (|). Only the fifth and sixth fields are of interest to translators. The fifth field contains the actual text which is translated. The sixth field contains the maximum number of alphanumeric characters that the fifth field may contain. Only the fifth field can be changed; changing the first through fourth fields will corrupt the database. The seventh field is optional. When present, it will always contain a capital **"T"**. Its presence indicates that the field needs translation. The seventh field should be removed when the record is translated. Only "**T|**" is removed; the records must always end with a bar.

An example of a default database text file line is:

```
  1   2  3      4            5             6  7

alarm|id|-1|description|MICRO PLACED OFFLINE|30|T|
```

The only portion of the line that can be changed are the words **"MICRO PLACED OFFLINE"** and the change must not exceed 30 alphanumeric characters. A Spanish translation is:

```
alarm|id|-1|description|MICRO FUERA DE LINEA|30|
```

Catalogs

Catalogs contain all text that is not database synonyms, help information, or default database text.

Catalog text for a particular language is defined in six catalog source files located in **/cas/nls/src/*LOCALE*** where ***LOCALE*** is the language's locale identifier. Each catalog source file holds a different type of catalog text.

- **pp_phr.src** contains phrases.

- **pp_err.src** contains error messages.
- **pp_wrn.src** contains warning messages.
- **pp_inf.src** contains informational messages.
- **pp_mnu.src** contains menu labels.
- **pp_font.src** contains font definitions.

All six catalog source files have a similar format, and their translation must obey the following rules. Failure to obey the rules makes it impossible to install the translations.

1. Do not change any line that starts with a dollar sign ($). Examples are:

   ```
   $ Error Message Catalog
   $ name ERROR
   $len 245
   $quote "
   $set SYM_SET_ERR
   ```

2. Do not change any words which start with **"SYM_"**. These are called symbols.

3. Only change text found between quotes. This text is called a message and is only defined on lines that begin with a symbol. Messages are the only part of a catalog that can be changed. An example is:

   ```
   SYM_ERR_COULD_NOT_OPEN "Cannot open %1$s"
   ```

   The message is **"Cannot open %1$s."** and it is the only part of the line that can be changed. A French translation is:

   ```
   SYM_ERR_COULD_NOT_OPEN "Impossible d'ouvrir %1$s"
   ```

4. Do not add quotes.

5. Messages must not exceed the catalog's text limit. The limits are:
   - 40 alphanumeric characters for **pp_phr.src** and **pp_mnu.src**;
   - 245 alphanumeric characters for **pp_err.src**, **pp_wrn.src**, and **pp_inf.src**; and
   - 255 alphanumeric characters for **pp_font.src**.

6. Do not split messages into separate lines. Each catalog source line defines a distinct message, and splitting a message will corrupt the file. When a message needs to be displayed across multiple lines, the **"\n"** character combination indicates where a line break is desired. Line breaks can only be used in **pp_err.src**, **pp_wrn.src**, and **pp_inf.src**. Translators can move line breaks within a message and

can add or remove line breaks as long as there are no more than 4 lines per message and no more than 72 alphanumeric characters on a line. An example of a message that spans 4 lines is given below:

```
SYM_WRN_EXAMPLE "Line 1\nLine 2\nLine 3\nLine 4\n"
```

7. Some catalog messages contain special character combinations called **substitution variables**. These define how dynamic information such as strings and numbers will be substituted into the message during system execution. All substitution variables start with the "**%#$**" character combination and end with the next blank character. The "**#**" is a number that indicates which variable is inserted. As messages are translated, the substitution variables can be moved as the sentence structure changes. An example is:

   ```
   SYM_INF_EXAMPLE "The %1$s jumped over the %2$s."
   ```

   A translation can change the sentence structure as follows:

   ```
   SYM_INF_EXAMPLE "The %2$s was jumped over by the %1$s."
   ```

   The substitution variables were moved to accommodate the new structure. Since they identify which variable is substituted, the correct substitution will take place even with the structure change. Substitution variables can be moved but must not be altered in any other way.

8. **pp_mnu.src** defines menu labels that contain mnemonic alphanumeric characters that are used in menus as *hot-keys*. **pp_mnu.src** is divided into sets identified by lines that start with "**$set**". Each set defines the menu labels for a distinct menu. The mnemonic character for a label is the character following a caret (^). When the label is translated, the mnemonic character must match a character in the label preceding the caret and must not match any other mnemonic alphanumeric characters in the set. An example is:

   ```
   $set SYM_SET_HIST_TYPE
   SYM_HIST_TYPE_ALARM "Alarm^A"
   SYM_HIST_TYPE_BADGE "Badge^B"
   SYM_HIST_TYPE_OPER "Operator^O"
   SYM_HIST_TYPE_TOUR "Tour^T"
   $set SYM_SET_HIST_SOURCE
   ```

   The lines between "**$set SYM_SET_HIST_TYPE**" and "**$set SYM_SET_HIST_SOURCE**" define a single menu. The first label is "**Alarm**" and its mnemonic character is "**A**". None of the labels within the set have the same mnemonic character. Note that other sets *can* define the same mnemonic alphanumeric characters.

9. The messages with **pp_font.src** define the fonts used by a language. The messages can contain font aliases or full **X** Logical Font Descriptions (**XFLD**). Each font must define a code set which supports the language. Since ISO8859-1 supports Western European languages, the English font descriptions can be used for all supported languages.

10. Messages that need translation will end with |**T**|. The |**T**| should be removed when the message is translated.

    SYM_ERR_COULD_NOT_OPEN "Cannot open %1$s"|T|

    becomes

    SYM_ERR_COULD_NOT_OPEN "Impossible d'ouvrir %1$s"

Installing Translations

Translations must be installed before an operator can use them. The following commands install translations. They are used after a language is first translated and after the translations are modified. Only operators with **root** permission can use the commands. Note that only English is installed during Picture Perfect base or language package installation.

buildlang

The **buildlang** command is used to build a language's catalog files and the resource files that use catalog messages. Any user with **root** permission can invoke this tool by typing the following at the command line:

buildlang *locale*

where **locale** is the locale identifier of the language being built.

The following example builds the catalogs and resource files for Spanish.

```
. /cas/bin/profile
buildlang es_ES
```

buildmeaning

The **buildmeaning** command builds the database meaning table with the database synonyms defined for all languages on the system. It uses the **meaning.dat** file found in every subdirectory of **/cas/nls/src**. Any user with **root** permission can invoke this tool by typing the following at the command line:

```
. /cas/bin/profile
buildmeaning
```

The command has no arguments.

upddb

The **upddb** command updates the database with a language's default database text. It can only be run from **/cas/db/default**. Any user with root permission can invoke this tool by typing the following at the command line:

upddb *locale*

where **locale** is the locale identifier of the language whose translations will be loaded.

The following example loads Spanish default database translations:

```
cd /cas/db/default

./upddb es_ES
```

avlang

The **avlang** command makes a language available or unavailable for operators. All language's except English must be made available before any operator can use them. Any user with root permission can invoke this tool by typing the following at the command line:

avlang *locale availability*

where **locale** is the locale identifier of the language whose availability is being changed, and

availability indicates whether the language is being made available or unavailable. A value of **A** makes the language available; a value of **U** makes the language unavailable.

The following example makes Spanish available.

```
avlang es_ES A
```

Translation Installation Example

The following commands make Spanish available to operators and make the default database use Spanish. They are entered only after installing the Spanish package.

```
buildlang es_ES
buildmeaning
upddb es_ES
avlang es_ES A
```

Only use the **upddb** command when the default database language is being changed. In the above example, the **upddb** command is not included unless the default database is being changed to Spanish.

Modifying Translations

At times a language's translations will need to be modified to correct spelling or to make meanings clearer. Modify the source text files following the rules defined in "Installing Translations" on page 32.12. Then re-install the language using the commands defined in the **Installing Translations** section. Not all of the commands need to be used:

- **buildlang** is only needed when catalog text has been modified,
- **buildmeaning** is only needed when database synonyms have been modified,
- **upddb** is only needed when default database text has been modified, and
- **avlang** does not need to be entered again since the language has already been made available.

Selecting An Operator Language

All operators are associated with a single language. This is the language in which the operator works. The language is first defined when the operator is created, and it can be changed at any time. The actual change does not take effect until the next time the operator logs into the system.

To define an operator's language, follow these steps:

1. Select **Control**, then **Operators** from the **Main** menu.
2. Define a new operator as described in Chapter 6 - Permissions and Operators or use the **Find** button to find an existing operator definition.
3. Click the **Country** button and select a language from the list of available languages displayed.
4. Click the **Save** button to save the operator record.

Selecting The Primary Language

The following command changes the primary language. The primary language must be an available language Any user with **root** permission can invoke this tool by typing the following at the command line:

chprlang ***locale***

where **locale** is the new primary language's locale identifier.

The following example sets the primary language to French.

```
chprlang fr_FR
```

Selecting Login Screen Language

On installation, the Picture Perfect Login screen is set to English. The **chxdmlang** command changes the language used by the screen. It should only be run after the **buildlang** command is used to install the language's catalogs and resource files. The system must be rebooted for the change to take effect. Any user with root permission can invoke this tool by typing the following at the command line:

chxdmlang ***locale***

where **locale** is the locale identifier of the language the login screen uses.

The following example changes the login screen to French:

```
chxdmlang fr_FR
```

Subsequent modifications to the text used in the screen require that the command be run again. As before, **buildlang** must be run before **chxdmlang**.

Error and Warning Messages

All error and warning messages are displayed with a type indicator followed by a message number. The type indicators are **E** for error messages and **W** for warning messages. Examples are:

```
E00123 - Error message number 123

W00123 - Warning message number 123
```

The **ppmsgnbr** facility provides the ability to view a warning or error message in a selected language. The command's calling convention is:

```
ppmsgnbr type number [locale]
```

where **type** is message type; ***E*** or ***W***,

number is message number, and

locale is locale identifier of the language in which message will be displayed. The argument is optional, with English as its default value.

Customizing Badge and Department Screens

Both the **Badge** and **Department** screens include fields which users may wish to customize. The **Badge** screen defines fields **Address 1** to **Address 5** and **User 1** to **User 40** to hold any data desired by the user. The **Department** screen defines fields **User 1** and **User 2** to hold any data desired by the user. Use the **User Customization Tool** to customize the **Address** and **User** field names as they are presented on the **Badges** and **Departments** forms. The customization may be made in all available languages. See "Chapter 31 - User Customization" for information on how to use the tool.

In Case of Problems

Chapter 33

Overview

The CMENU program is targeted towards support personnel and Picture Perfect users with system-level responsibility. CMENU is a menu-driven consolidation of various commands and programs used to administer the Picture Perfect system.

NOTE

The CMENU program provides raw diagnostic data to technical support personnel. This chapter does not equip users with all of the information and background required to perform troubleshooting. Instead, this chapter shows users how to use CMENU functions to capture diagnostic data. The support representative then uses this raw data to troubleshoot the problem and provide a solution.

If you are familiar with Picture Perfect or the operating system, you can execute most of the functions provided by CMENU from the command line. Also, many of the functions are duplicated by the XWindows/Motif-based software. This character-based system provides remote support (since Picture Perfect does not currently support dial-up terminals).

CMENU is not all-inclusive. If a function that you require does not appear on one of the menus, there is still a possibility that the function or program exists elsewhere on the system in some other format.

The **Watchlog** function in the **Diagnostics subsystem menu** displays error (and information) messages from the transaction processing system (TPS). See the error messages chart for a list of the most common error messages and what they mean.

Use the **Diagnostic** and the **Status** functions to troubleshoot problems that may occur. See the troubleshooting chart for problems and possible solutions.

Press F1 to obtain **Help** for the currently highlighted selection in any of the menus or submenus.

What You Will Be Doing

This chapter shows you how to use the CMENU utility, how to handle error conditions, and how to troubleshoot problems.

Conventions

Terms such as SYN, ACK, ENQ appear in all caps in this chapter, just as they appear in the Watchlog. See the Glossary for a definition of these terms.

The term TPS (Transaction Processing System) appears without the article "the".

Terms such as "ACK", "daemon", and "packet" are followed with a short definition in parentheses. A more detailed definition appears in the Glossary.

Using the CMENU Utility

The Picture Perfect **Utilities Menu** (Figure 33-1) is the menu for all the system diagnostic utilities in the CMENU program. To display the **Utilities Menu**, type **cmenu** at the command-line prompt and press Enter or click the middle mouse button and select **Cmenu** from the **Programs Menu**. Press F1 to obtain onscreen **Help** for the currently highlighted selection in any of the menus or submenus.

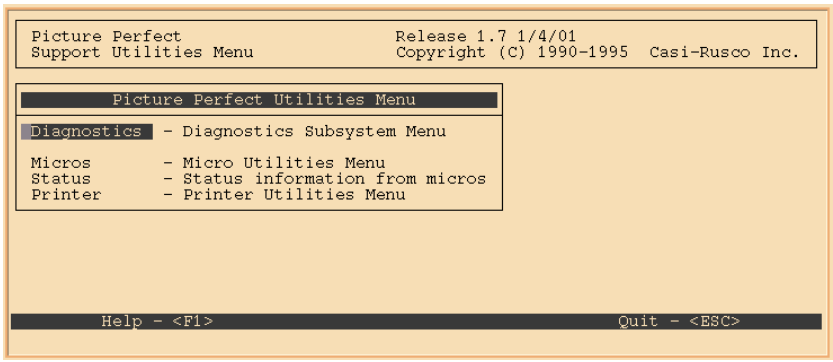


Figure 33-1. Utilities Menu

Diagnostics Subsystem

The **Diagnostic subsystem menu** (Figure 33-2) has many diagnostics available for troubleshooting TPS. Use the following menu selections to view, set, or clear individual diagnostics.

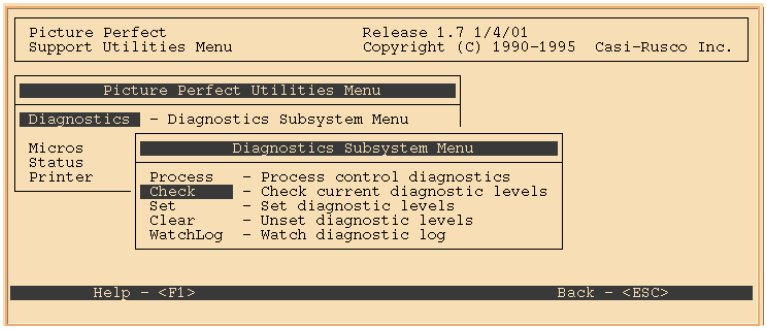


Figure 33-2. Diagnostics Subsystem Menu

- **Process:** Use **Process control diagnostics** to view the status of message queues, memory, and communications, and to view information for alarms, micros, ports, and terminals.
- **Check:** Use **Check current diagnostic** levels to view the on / off diagnostic status for TPS managers and drivers.
- **Set:** Use the **Set and Clear diagnostic** levels functions to set diagnostics on and off for TPS managers and drivers.
- **Watchlog:** Use **Watch diagnostic log** to view TPS manager and driver transactions in a scrolling window.

NOTE

Set diagnostics for a short duration of time, because the diagnostic writes a large volume of detailed information to the TPS log.

System performance is degraded while diagnostics are set. Diagnostics usually are not set during normal operations.

Process Control Diagnostics

This selection allows the operator to look at the data structures contained in the process control block (PCB). The PCB is the “nerve center” of TPS and runs only when TPS is running. Otherwise, the appropriate message displays and the program terminates.

NOTE

This utility can also be run by itself from the command line by typing at the # prompt:

`dpc` Enter

Select **Process** to display the **Dump PC Main Utilities Menu** (Figure 33-3).

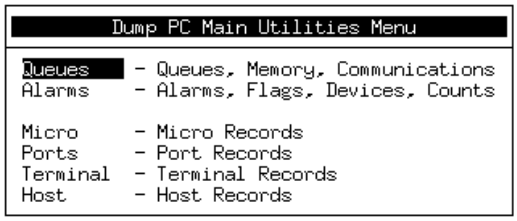

Dump PC Main Utilities Menu
Queues - Queues, Memory, Communications
Alarms - Alarms, Flags, Devices, Counts
Micro - Micro Records
Ports - Port Records
Terminal - Terminal Records
Host - Host Records

Figure 33-3. Dump PC Main Utilities Menu

Queues

Select **Queues**, **Memory**, **Communications** on the **Dump PC Main Utilities Menu** to display shared memory usage, communications flow control flags, and the number of messages on each message queue (Figure 33-4). The display is updated every second. To exit the display, press (ESC).

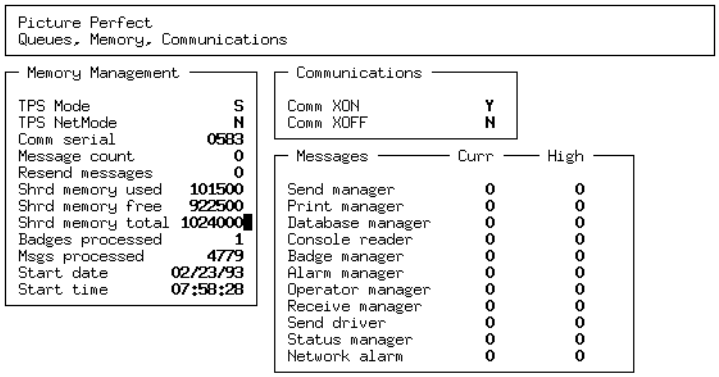


Figure 33-4. Queues, Memory, Communications Screen

Messages

The processes pass data to each other using message queues. The total number of messages allowable on one message queue is equal to the total number of messages allowable system wide, and is set to 800 when the system is installed.

Each process continuously reads its own queue, looking for messages addressed to it. When a message is found, the process performs an action based on the type of message and the data within the message. In some cases, this results in another message being created and passed to a different process, while in other cases, the process handles the message itself.

An example of the former is the **Receive Manager** in receipt of a badge transaction message. Since the **Receive Manager** is responsible for interpreting and routing all types of messages sent by the micros, it doesn't have time to perform all the tasks necessary to complete each transaction. Instead, it routes the message to the appropriate manager task for further processing by essentially duplicating the message and placing it on that manager's queue. An example of the latter is the **Badge Manager** in receipt of a badge history transaction. Here, the message type is a badge (BDG) message, containing the type of transaction, along with the badge ID and other information. The badge manager gets enough information to complete the transaction, updating the badge holder's record in the badge table and adding a new record to the badge history table.

The message queue display shows each manager's or driver's queue and the number of messages currently on them. In an efficient system, the numbers should all remain at zero, since each process tries to empty its queue as quickly as possible.

Memory Management

The TPS contains its own **Memory Management** system specially designed for interprocess communications. At system startup, a shared memory segment is initialized. This segment contains the process control block and associated data structures. The remainder of this segment is made available to all processes for use as needed. The main use of shared memory is for passing the text portions of messages.

One limitation of message queues is the total amount of memory the messages in the queue system can occupy. Although it is possible to place entire messages on the queue and to allow the receiving processes to read them directly, two factors make this impractical. First, each time a message is to be forwarded to another process, a whole new message would have to be created and a memory copy performed. This is rather inefficient, since much of the CPU time would be spent copying data. Second, it would be possible to exceed the maximum amount of memory allowable on message queues, depending on the size and number of messages on all queues.

To overcome this, memory for the message is allocated within the shared memory segment, and the pointer to this message is passed as the data (text) portion of the message. When the recipient process receives a message, it actually receives the address of the data portion of the message. With this address, it can perform whatever operations are necessary without copying the data into the process' local data segment.

The **Memory Management** display shows the number of shared memory blocks currently allocated, the number of bytes of shared memory currently in use, and the number of bytes currently available. Also shown is the system-wide message count, the resend transmission window size, the current outbound message serial number, and the total number of messages processed since the system was started.

If the system-wide message count exceeds 75% of the system's capacity, the message count is displayed in red. If the amount of shared memory used is greater than 50% of the total bytes in the shared data segment, the shared memory is displayed in red.

Communications
Under normal circumstances, the **COMM XON** flag is **ON** (Y) and the **COMM XOFF** flag is **OFF** (N). When the total number of messages on all queues exceeds the **XOFF Threshold** specified in the system configuration record, these flags' values are reversed and the host micros accepts no more messages from the micros. This allows the system to process the messages on the queues well before the system becomes overridden with traffic. No messages are lost, since the micros continuously resend their traffic until messages are accepted again.

NOTE

The system exceeds the transaction threshold only in extreme circumstances. Note (and closely monitor) each occurrence.

Chronic message overrun may be caused by:

- **XON/XOFF** threshold that is too low. Set the transaction on / off thresholds using the **Parameters** screen (obtained from the **Control** icon on the Picture Perfect **Main** menu). For the RISC System / 6000 host, settings are 1750 / 2000.
- Malfunctioning printer or print spooler.
- Extreme lack of memory.

Alarms, Flags, Devices, Counts

The **Alarms**, **Flags**, **Devices**, **Counts** screen (Figure 33-5) shows information that is less likely to change over a period of time. The display is updated every second.

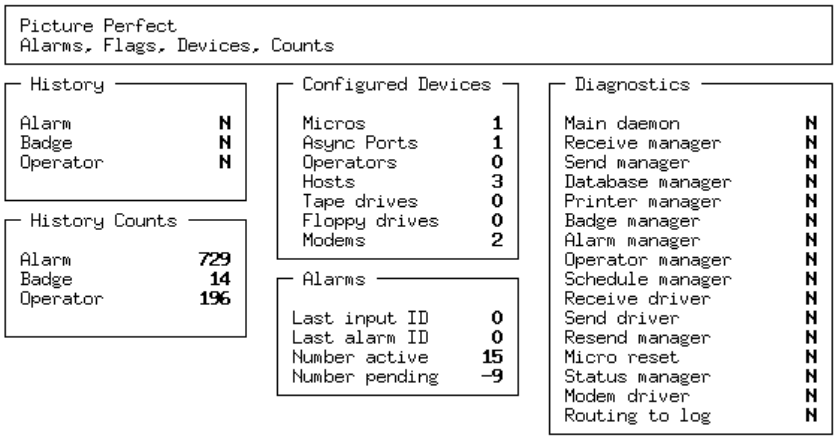


Figure 33-5. Alarms, Flags, Devices, Counts

Alarms

The **Alarms** block shows the ID of the last input tied to an alarm, the ID of the last alarm, the number of active alarms, and the number of pending alarms.

Flags

Two sets of flags are monitored on this display: **History** flags and **Diagnostics** flags. **History** flags are set briefly while full history tables are swapped with empty tables. The flags are used to prevent the various managers from writing to them until the exchange has been completed. **Diagnostics** flags indicate which process diagnostics are being currently routed to the diagnostic monitor and diagnostic log. If the log routing flag is on (Y), any diagnostics sent to the diagnostic monitor are also sent to the log.

Use diagnostics only when required, since diagnostics degrade the performance of the system, occupy shared memory, and consume disk space.

The status manager diagnostics turn on automatically when you request status from a micro, and turn off (flag clears) when you exit the status monitor. This is normal, and does not indicate a problem.

Configured Devices

The **Configured Devices** display shows the numbers of various configured devices. Once the system is started, these numbers do not change. The key items to note are the number of hosts, micros, ports, printers, and operators. The current version of CMENU does not display device information about tape drives and floppy drives.

History Counts

The **History Counts** display shows the number of transactions for alarms, badges, and operator activity. These numbers reflect changes to the counts while the screen is displayed.

Micro Map

The **Micro Map** screen (Figure 33-6) provides a visual display of all the micros on the system and their relative position on their respective serial lines. Each page on the display shows up to 10 serial lines. A line of micros is represented by a serial (tty) line, followed by all the micro addresses on that line. Between the host and the first micro and between each micro is a hyphen (-). The absence of a hyphen indicates that the communications path is broken somewhere in that segment. If a micro has been configured or placed offline by the host, the micro's ID is displayed in normal intensity. Micros that are in true online, pending online, or pending offline state are displayed in high intensity.

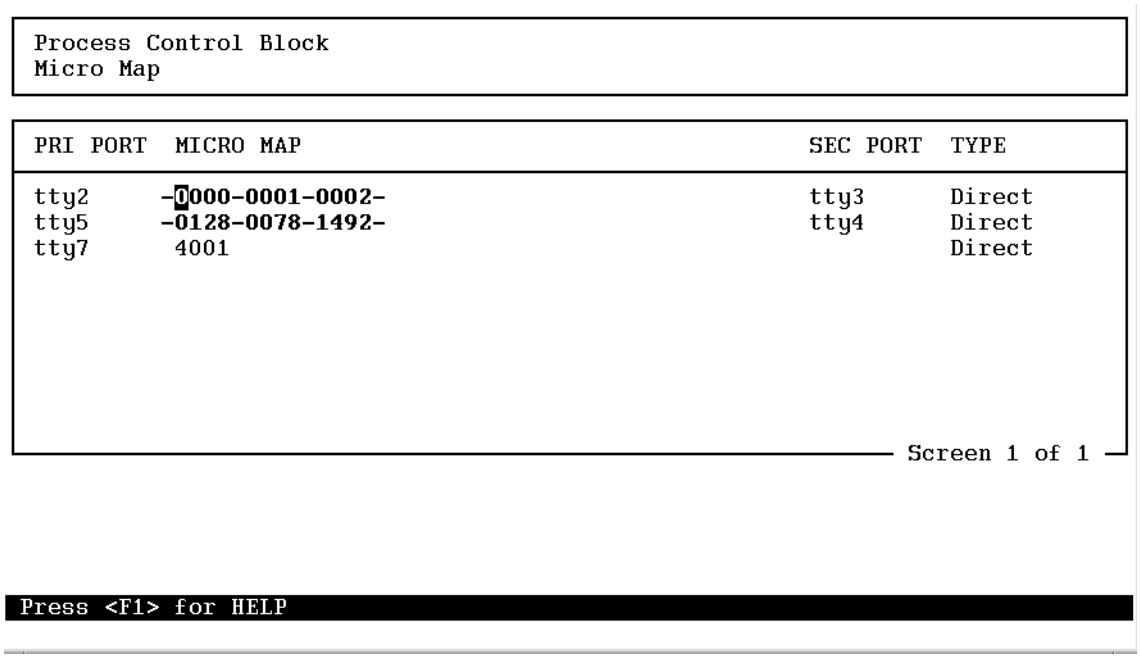


Figure 33-6. Micro Map

Context-Sensitive Help

There are several options available when viewing the **Micro Map** screen. Press (F1) or ? for a list of these options.

Multiple Pages
If your system is configured with more than 10 serial lines, additional pages of lines can be accessed by pressing **Page Down** or **f** to display the next page of information. To move back to a previous page, press **Page Up** or **b**.

Moving About the Screen
To view the detailed communications status or to run a full communications trace on a micro, you must first select the micro. The arrow keys can be used to move the cursor to the micro whose status or communications trace you want to view. After the cursor is located at the micro, press F2 or **t** to start tracing packets to and from the micro, or press F3 or **s** to view the detailed status of the micro. The detailed status of all micros on the same serial line is available using this method. This is described in more detail in the "Micro Status" paragraph below.

Dialup Micros
Unconnected dialup micros are not represented on the **Micro Map** screen. When a micro dials in, it is shown on the serial line to which it is attached. To view the detailed status of an unconnected dialup micro, press F4 or **m**. You will be prompted to enter the micro's ID. After entering the ID and pressing Enter , the detailed status of that micro is displayed.

Micro Status
The **Micro Status** screen displays information about each micro configured. The display is updated every second. See Figure 33-7.

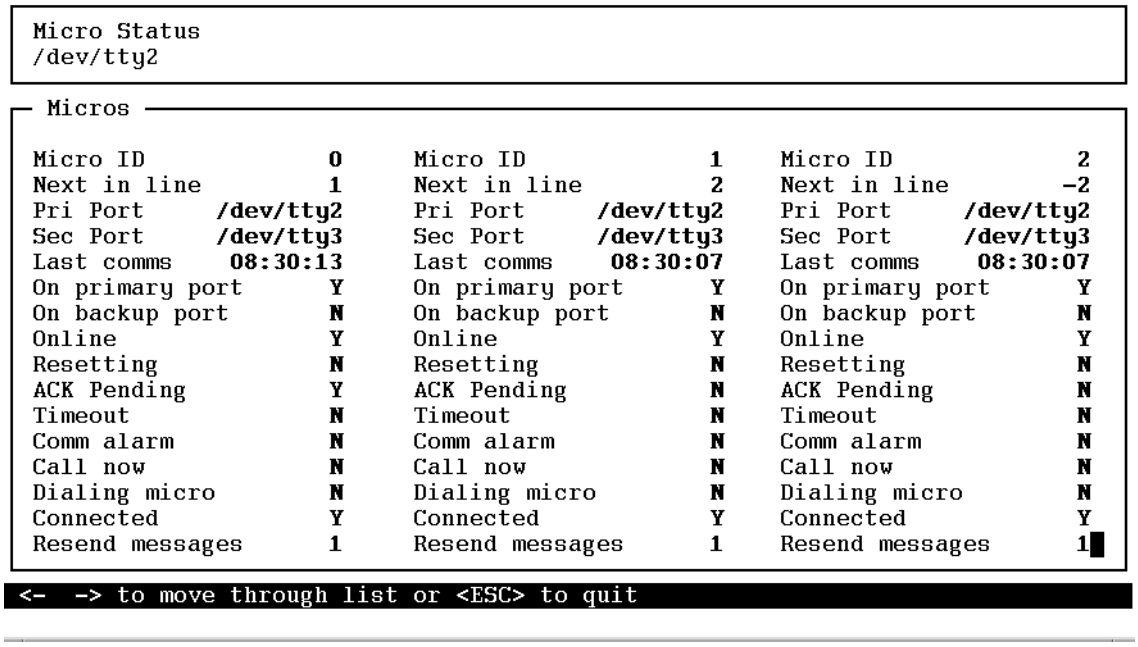

Micro Status
/dev/tty2
Micros
Micro ID 0 Micro ID 1 Micro ID 2
Next in line 1 Next in line 2 Next in line -2
Pri Port /dev/tty2 Pri Port /dev/tty2 Pri Port /dev/tty2
Sec Port /dev/tty3 Sec Port /dev/tty3 Sec Port /dev/tty3
Last comms 08:30:13 Last comms 08:30:07 Last comms 08:30:07
On primary port Y On primary port Y On primary port Y
On backup port N On backup port N On backup port N
Online Y Online Y Online Y
Resetting N Resetting N Resetting N
ACK Pending Y ACK Pending N ACK Pending N
Timeout N Timeout N Timeout N
Comm alarm N Comm alarm N Comm alarm N
Call now N Call now N Call now N
Dialing micro N Dialing micro N Dialing micro N
Connected Y Connected Y Connected Y
Resend messages 1 Resend messages 1 Resend messages 1
<- -> to move through list or <ESC> to quit

Figure 33-7. Micro Status

Each page of this screen lists information for up to three **Micro IDs**, in three columns. Each column uses these fields:

Micro ID: Displays the micro's identification number.

Next in line: Displays the ID number of the downstream micro.

Pri Port: Displays the primary port of the micro.

Sec Port: Displays the secondary port of the micro.

Last comms: In the case of a downstream micro, this field shows the last time a non-ACK packet was received from the micro. In the case of a port-group leader (first micro in the port group--the micro responsible for acknowledging messages for all other micros on the line), this field shows the last time any packet was received, including ACK packets (an acknowledgment that the last message was received). The reason for the difference is that the port-group leader acknowledges packets bound for other group members, so it cannot be assumed that since the packet was acknowledged that the destination micro is responding.

If that micro port is not initialized, the string **????????** appears in the port name field to alert the operator. For example, modem ports are not initialized, but information for modem ports also displays on this screen.

Flag Fields: The last 10 fields are yes / no **(Y/N)** flag fields that reflect the current settings and conditions of the micro.

If the micro requests a mandatory reset (during power-up) or if the host initiates a mandatory reset command (using operator request), the micro "resetting" flag is set until the **mreset** process resets the micro and the micro sends a final **SYN** (synchronization) message to indicate that it is online.

Micro port group leaders responsible for ACKing messages will have their "ACK Pending" flag set to **N.** This is a brief condition, and under normal circumstances, the flag will not appear to change. A flag that changes to **Y** indicates an unresponsive micro and a problem that requires troubleshooting.

If a packet is not acknowledged after the number of attempts specified in the micro record, the micro is considered to be in an "error" condition. This is a temporary condition that exists until an alarm message can be created and sent to the alarm manager. After this, the "error" flag is cleared and the micro's state becomes "alarm" until a valid ACK or data packet is received from the micro. Once this occurs, all flags are cleared including the "offline" flag if it is set.

Port Records

Check the **Port Records** display (Figure 33-8) to ensure that the selected port settings have not changed.

The **Port Records** display shows information that normally should not change after TPS has been loaded. The **Speed** (baud rate), **Parity**, number of **Data Bits**, and number of **Stop Bits** should be checked, however, to ensure that the port is running at the recommended settings: 19200 baud, NONE (no) parity, 8 data bits, and 1 stop bit. It is possible for these settings to become changed after the transaction processor is loaded, which can result in a host-to-micro communications error. Check this display to ensure that the port settings are correct.

If the **Idle** field is Y or the port is not initialized, not opened for sending, or not opened for receiving, and a port group exists for it, a problem exists. Flags display (in reverse video) to alert the operator that the condition is abnormal.

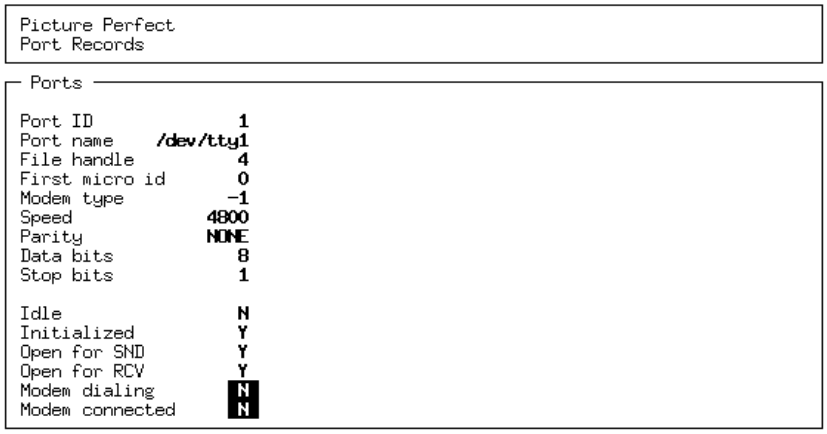


Figure 33-8. Port Records

Terminal Records

The **Terminal Records** screen displays information about terminals that are currently logged on. CMENU supports up to three Picture Perfect terminals logged on at one time. The **Terminal/Host** field shows the Internet host name (display), the **Logon** field shows the number of times the terminal has been used for logon since the **Epoch** (the last TPS start / restart), and the **Alarm Alert** field indicates (Y or N) whether an alarm alert is currently running on the display.

Host Records

The **Host Records** screen (Figure 33-9) displays information about the system hosts. This includes the **Host ID**, **Host Name**, **IP Address**, **Last Communications** time, and yes / no flags for **Online** status, **ACK Pending**, **Timeout**, **Communications Alarm**, and **Connected**.

```
Picture Perfect
Host Records

 Remote Hosts

Host ID              1
Host Name     homeplate
IP Addr  192.9.200.100
Port Addr         6101
Last comms    13:11:35


Online               Y

ACK Pending          N
Timeout              N
Comm alarm           N


Connected            Y

<-  -> to move through list or <ESC> to quit
```

Figure 33-9. Host Records

Check

The **Check Current Diagnostic Levels** function on the **Diagnostics Subsystem Menu** (Figure 33-10) shows the current diagnostic level for the TPS. Each manager or driver task uses a flag which is either **On** or **Off**.

```
Current diagnostic levels
-------------------------
log       OFF (8000)
schmgr    OFF (4000)
stsmgr    OFF (2000)
mreset    OFF (1000)
rsndmg    OFF (0800)
snddrv    OFF (0400)
rcvdrv    OFF (0200)
moddrv    OFF (0100)
oprmgr    OFF (0080)
almmgr    OFF (0040)
bdgmgr    OFF (0020)
prmgr     OFF (0010)
dbmgr     OFF (0008)
sndmgr    OFF (0004)
rcvmgr    OFF (0002)
main      OFF (0001)

Press <RETURN> to continue
```

Figure 33-10. Check Current Diagnostic Levels

By default, the diagnostic log is located in the **`/cas/log`** directory and is named **`log.MMDD`** where **`MM`** is substituted with a zero-padded month number and **`DD`** is substituted with a zero-padded day. For example, the log for April 5 of any year is named **`log.0405`**. The log automatically rolls over to a new log prior to the first log entry after midnight (23:59) local time. A new log is not created until a log entry is necessary. The

system keeps logs for 7 days before it begins automatic erasure of the oldest day.

The **Diagnostic Monitor** is a user program used to view diagnostics from within the Picture Perfect X-windows environment. It consists of a set of internal buffers updated by whichever processes currently have diagnostics set.

Set

The **Set diagnostic levels** selection displays a menu of diagnostics that you can set (Figure 33-11). The items on the menu are a subset of the fifteen diagnostics levels available. (Future releases of CMENU may include additional selections.)

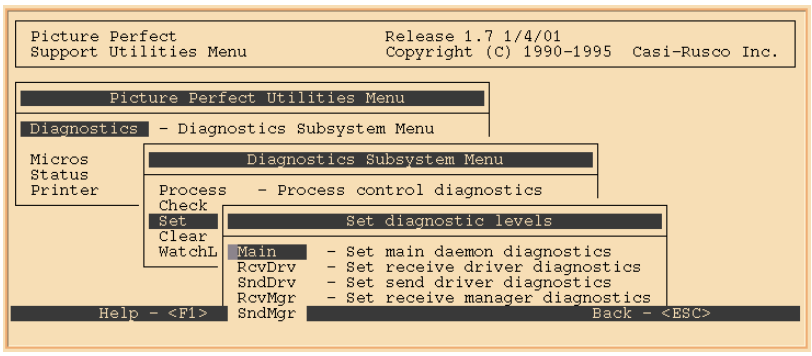


Figure 33-11. Set Diagnostic Levels Menu

When you **Set** diagnostics on one or more processes, system performance is degraded. If you route diagnostics to the log, the system uses more disk space.

Main

The **Main** daemon is the transaction processor's process group leader. It is responsible for initializing the various queues, semaphores, shared data segments, and spawning each of the tasks that make up the transaction processing system. If a task abends (abnormally ends) for any reason, the **Main** daemon determines which task it was, checks the integrity of the message queues, sleeps 5 seconds, and respawns the task that failed. Most of output from the **Main** daemon is logged regardless of the diagnostics level, due to the importance of this task.

RcvDrv

The **receive driver** is the only task for which more than a single instance of itself can exist. Each port attached to a micro has a

dedicated receive driver. This eliminates the need for polling and software multiplexing.

The **receive driver** diagnostic shows an acronym for the message type and a hexadecimal dump of each message. The entry is made immediately after packet decryption. On a busy system, this represents an enormous amount of data; therefore, this diagnostic should be used sparingly.

Each **receive driver** process passes its messages to a single **receive manager** queue for further routing.

SndDrv

The **send driver** writes messages to specific ports (based on micro addresses) by matching up the destination micro with its port. Like the **receive driver**, the diagnostic shows an acronym for the message type, followed by a hexadecimal dump of the message itself.

RcvMgr

The **receive manager** routes messages passed to it from the **receive driver** to the appropriate manager task. Messages are routed to the **badge manager** (bdgmgr), **database manager** (dbmgr), **alarm manager** (almmgr), **send manager** (sndmgr), and **status manager** (stsmgr). During normal operation, the only log entries made by the **receive manager** are an acronym representing the message type received. Entries are also made for database calls that fail. In such cases, the SQL error code can be used to determine the cause of the failure.

A micro coming out of “alarm” state sends a message that becomes a log entry:

```
micro “n” is now responding.
```

SndMgr

Programs needing to send messages to micros do so by passing their messages to the **send manager**. The **send manager** translates these messages into data packets recognized by the micro. After the message has been translated, it is passed to the send driver, which does the actual writes to the ports. The **send manager** is also responsible for expanding broadcast messages into separate messages for each port. Only one broadcast message per port to which at least one micro is attached is sent. Only one broadcast message is sent to each port where a micro is configured.

Like the **receive manager**, only an acronym showing the message type being sent is logged during normal operation. If a port is known to be malfunctioning, or the destination micro is offline, the message is not sent and an entry is made to this effect. Entries are also made for each instance of an invalid micro address such as an address that has not been loaded by TPS.

Badge

The **badge manager** receives all badge (BDG) messages from the **receive manager** for purposes of logging them to the history tables. The **receive manager** passes all badge swipes except those generated by a console reader when the badge program is waiting for a badge swipe from that reader. The **badge manager** diagnostics show the badge ID and the type of badge transaction.

Resend

The **resend manager** resends all non-ACK packets until the destination micro responds or is placed offline through use of the mstate command. The **resend manager** also generates SYN and ENQ messages which act together to help determine whether a micro is still running. Since a SYN message is ACKed by the port group leader, it alone is not enough to make this determination. A SYN message immediately followed by an ENQ message serves two purposes: (1) to synchronize the micro's clock, and (2) to cause the destination micro to originate a SYN message with its address when it receives the ENQ message. See the Glossary for a definition of SYN and ENQ messages.

When the **resend manager** diagnostics is set, each attempt to communicate with a micro is logged. The entry contains the message sequence number, the retry attempt number, and the packet type.

Clear

When diagnostics are no longer needed, they should be cleared. To determine which diagnostics need to be cleared, use the **Check** function on the **Diagnostic Subsystem Menu** (Figure 33-12) to check current diagnostic levels. As in **Set diagnostic levels**, the menu selections are a limited subset of the entire set of diagnostics available.

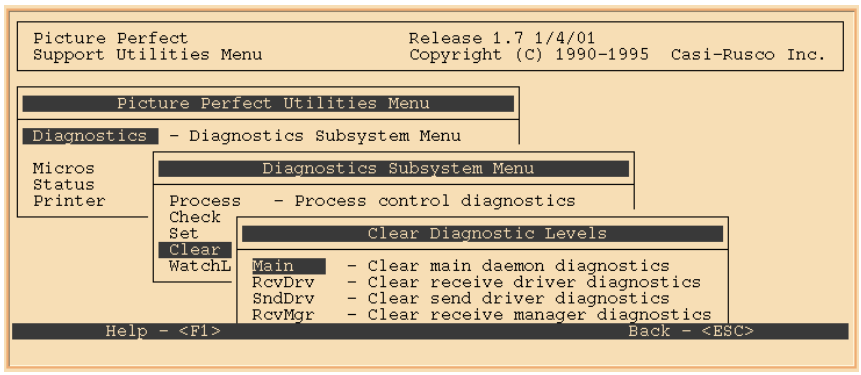


Figure 33-12. Clear Diagnostic Levels Menu

WatchLog

The **Watch diagnostic log** selection allows the operator to monitor the diagnostic log. Any diagnostics written to the log are displayed in real-time. To stop viewing the diagnostic log, press (ESC).

For example, when you power up the system after initial setup, use the **Watchlog** utility to view messages that verify whether the system loaded properly. After the TPS messages display, they "spawn" the TPS "managers" such as the **badge manager** (bdgmgr) and the **operator manager** (oprmgr). About 20 seconds after TPS starts, the first polling loop starts. If the system has loaded correctly, the polling message is the last TPS (or TPS manager) message that displays.

If the system is working correctly, more information messages may appear when operators log in (addelo) and the system adds displays (addisp).

Micro Utilities

The **Micro Utilities Menu** (Figure 33-13) provides access to utilities that enable the operator to view and change the logical state of any attached micros. The "logical state" is the state of the micro that TPS currently identifies.

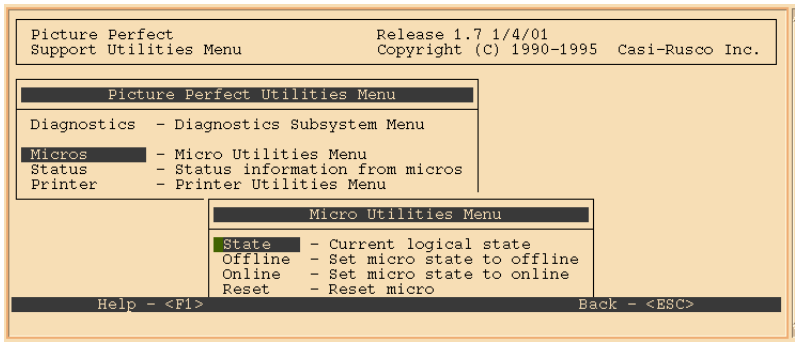

Picture Perfect
Support Utilities Menu
Release 1.7 1/4/01
Copyright (C) 1990-1995 Casi-Rusco Inc.
Picture Perfect Utilities Menu
Diagnostics - Diagnostics Subsystem Menu
Micros - Micro Utilities Menu
Status - Status information from micros
Printer - Printer Utilities Menu
Micro Utilities Menu
State - Current logical state
Offline - Set micro state to offline
Online - Set micro state to online
Reset - Reset micro
Help - <F1>
Back - <ESC>

Figure 33-13. Micro Utilities Menu

State

The **Current logical state** selection prompts the user for a micro ID. Enter a valid micro ID or the letter **a** (for all) and press Enter to display a detailed description of all states that apply, and also any messages on the resend list for the selected micro.

Offline

The **Set micro state** to offline selection places a micro offline. The transaction processor does not attempt to send messages to an offline micro. Setting the micro offline also prevents these messages from being stored on the resend list. If a micro is going to be out of service for a long time, take the micro offline to preserve shared memory.

Online

The **Set micro state** to online selection forces the micro to the online state. Any messages accumulated on the resend list are removed and a mandatory reset (RST) message is sent.

Reset

The **Reset micro** selection sends a mandatory reset message to the specified micro.

Status Information from Micros

The **Status Information From Micros** menu (Figure 33-14) allows the operator to obtain current area, badge, and door records from a selected micro.

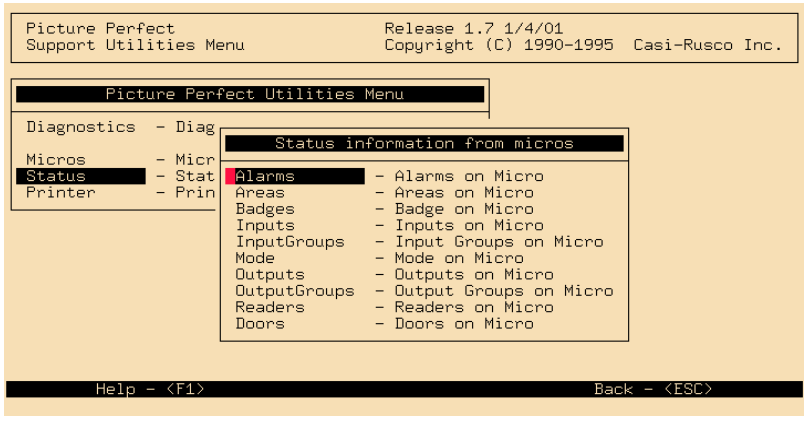

Picture Perfect
Support Utilities Menu
Release 1.7 1/4/01
Copyright (C) 1990-1995 Casi-Rusco Inc.
Picture Perfect Utilities Menu
Diagnostics - Diag
Micros - Micr
Status - Stat
Printer - Prin
Status information from micros
Alarms - Alarms on Micro
Areas - Areas on Micro
Badges - Badge on Micro
Inputs - Inputs on Micro
InputGroups - Input Groups on Micro
Mode - Mode on Micro
Outputs - Outputs on Micro
OutputGroups - Output Groups on Micro
Readers - Readers on Micro
Doors - Doors on Micro
Help - <F1>
Back - <ESC>

Figure 33-14. Status Information From Micros Menu

Alarms

The **Alarms on Micro** selection allows you to send an alarm-status request to a specific micro. When the system prompts you, enter the micro ID where the alarm request is sent, press Enter, and wait about 30 seconds for the screen to display information. If the screen scrolls too rapidly, press CTRL-S to suspend and CTRL-Q to restart the output. Press ESC to quit and return to the previous menu.

Areas

The **Areas on Micro** selection allows you to send an area-status request to a specific micro. When the system prompts you, enter the micro ID where the area request is sent, press Enter, and wait about 30 seconds for the screen to display information. If the screen scrolls too rapidly, press CTRL-S to suspend and CTRL-Q to restart the output. Press ESC to quit and return to the previous menu.

Badges

The **Badges on Micro** selection allows you to send a badge-status request to a specific micro. When the system prompts you, enter the badge ID (full 10 digits) and the micro ID, press Enter, and wait about ten seconds for the screen to display information. If the screen scrolls too rapidly, press CTRL-S to suspend and CTRL-Q to restart the output. Press ESC to quit and return to the previous menu.

Inputs

The **Inputs on Micro** selection allows you to send an input-status request to a specific micro. When the system prompts you, enter the micro ID where the input request is sent, press Enter, and wait about 30 seconds for the screen to display information. If the screen scrolls too rapidly, press CTRL-S to suspend and CTRL-Q to restart the output. Press ESC to quit and return to the previous menu.

Input Groups

The **Input Groups on Micro** selection allows you to send an input group-status request to a specific micro. When the system prompts you, enter the micro ID where the input group request is sent, press Enter, and wait about 30 seconds for the screen to display information. If the screen scrolls too rapidly, press CTRL-S to suspend and CTRL-Q to restart the output. Press ESC to quit and return to the previous menu.

Mode

The **Mode on Micro** selection allows you to send an mode-status request to a specific micro. When the system prompts you, enter the micro ID where the mode request is sent, press Enter, and wait about 30 seconds for the screen to display information. If the screen scrolls too rapidly, press CTRL-S to suspend and CTRL-Q to restart the output. Press ESC to quit and return to the previous menu.

Outputs

The **Outputs on Micro** selection allows you to send an output-status request to a specific micro. When the system prompts you, enter the micro ID where the output request is sent, press Enter, and wait about 30 seconds for the screen to display information. If the screen scrolls too rapidly, press CTRL-S to suspend and CTRL-Q to restart the output. Press ESC to quit and return to the previous menu.

Output Group

The **Output Group on Micro** selection allows you to send an output group-status request to a specific micro. When the system prompts you, enter the micro ID where the output group request is sent, press Enter, and wait about 30 seconds for the screen to display information. If the screen scrolls too rapidly, press CTRL-S to suspend and CTRL-Q to restart the output. Press ESC to quit and return to the previous menu.

Outputs

The **Outputs on Micro** selection allows you to send an output-status request to a specific micro. When the system prompts you, enter the micro ID where the output request is sent, press Enter, and wait about 30 seconds for the screen to display information. If the screen scrolls too rapidly, press CTRL-S to suspend and CTRL-Q to restart the output. Press ESC to quit and return to the previous menu.

Readers

The **Readers on Micro** selection allows you to send a reader-status request to a specific micro. When the system prompts you, enter the micro ID where the reader request is sent, press Enter, and wait about 30 seconds for the screen to display information. If the screen scrolls too rapidly, press CTRL-S to suspend and CTRL-Q to restart the output. Press ESC to quit and return to the previous menu.

Doors

The **Doors on micro** selection allows you to send a door-status request to a specific micro. When the system prompts you, enter the micro ID where your door-status request is sent, press (Enter), and wait about 20 seconds for the screen to display information. If the screen scrolls too rapidly, press (CTRL)-S to suspend and (CTRL)-Q to restart the output. Press (ESC) to quit and return to the previous menu.

Printer Utilities

The **Printer Utilities Menu** (Figure 33-15) allows the operator to view and cancel print requests. Print requests originated by other users can only be cancelled if the operator has an effective user ID of superuser (**`root`**).

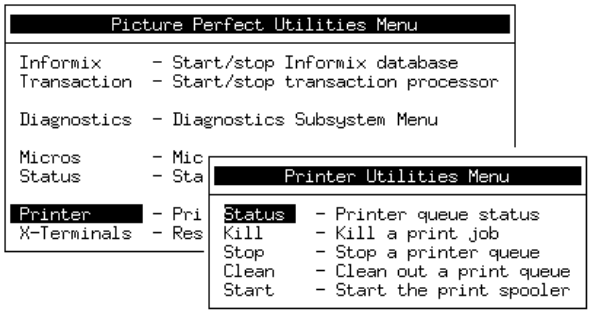

Picture Perfect Utilities Menu
Informix - Start/stop Informix database
Transaction - Start/stop transaction processor
Diagnostics - Diagnostics Subsystem Menu
Micros - Mic
Status - Sta
Printer - Pri
X-Terminals - Res
Printer Utilities Menu
Status - Printer queue status
Kill - Kill a print job
Stop - Stop a printer queue
Clean - Clean out a print queue
Start - Start the print spooler

Figure 33-15. Printer Utilities Menu

Status

The **Printer queue status** selection displays information about all printer queues, including the name of the print queue, the status of the queue, the name of the job, and the percentage of the file printed so far.

Kill

The **Kill a print job** selection is not fully menu-driven. After the printer status displays, a prompt asks you to note which print request you want to kill. When you press (Enter), the system prompts you for the request number and then removes that request from the queue.

NOTE The KILL request does not stop a print job that has already started.

Stop

If the printer spooler is malfunctioning, the **Stop a printer queue** selection can be used to temporarily stop it. From this point, requests can be removed and the spooler restarted.

Clean

The **Clean out a print queue** selection is used to stop the spooler, remove all requests, and restart it. Any jobs previously submitted are completely removed from the system, including the one currently printing.

Start

The **Start the print spooler** selection restarts the print spooler.

Troubleshooting Guide

The following chart (Table 33-1) lists problems you might experience and possible solutions. Use this guide to perform troubleshooting procedures. If you are not successful, contact your Picture Perfect support representative for assistance.

Table 33-1: Troubleshooting Chart

Problem	Action
Reader: A reader is not working.	- Verify that the reader is online and enabled. - Watch 2RP/8RP lights for badge read. - Watch the Activity Monitor for transaction messages.
Reader: When a badge is swiped, the reader light changes from green to red.	- Verify the Normally Closed/Open state of the door strike output assigned to the reader. - Watch the Activity Monitor for transaction messages.
Reader/Door: When a valid badge is swiped through the reader, the door does not unlock.	- Verify that the badge is valid for the area where the reader is assigned. - Verify that the reader is online. - Verify that the micro is working. - Verify that the door information is correct. - Verify input group and outputs for the door and reader.
Badge Error conditions are not being logged to the monitor/log.	- Verify the badge routing information for the area where readers are used. - Verify that badge messages are enabled for the Monitor.
Badge does not work for a specific area.	- Verify that the area is properly set up. - Verify that the badge is assigned a category that matches a category assigned to the area.

Table 33-1: Troubleshooting Chart (Continued)

Problem	Action
An operator cannot assign categories to an area/badge because the categories do not appear in the picklist.	- Verify the Permission Group for the “missing” category. - Verify the Categories Permission Group assigned to the operator.
Cannot log on to Picture Perfect.	- Verify that you typed your Logon ID correctly.* - Verify that you typed your password correctly.* - Verify that the operator table has only one entry for your Login ID. *Login ID and Password are case sensitive.
Micro is not working.	- If the micro was newly configured, restart Picture Perfect. Immediately run logtail to trace to the log file. Check the log file to see if the line is set up properly. - Verify micro communication using the **CMENU** utility. - Verify host-to-micro communications. - Verify the power to the micro. - Verify with micro indicators that the micro is functioning. (See the Micro/4-P and/or Micro/5 Manual.) - Request Status from the micro. - Watch the Activity Monitor for transaction messages.
Alarms: An alarm condition is occurring but the alarm is not being reported in the Alarm Monitor.	- Verify that an alarm is assigned to the input group for the input point that detects the condition. - Verify that the alarm is routed to the Monitor. - Verify that alarm messages are enabled. - Verify that the terminal is in the terminal table.* *Changes to the terminal may require TPS restart (or system database reset).
Reader: A reader works but the associated exit pushbutton does not work.	- Verify that the Exit DI Input is assigned to the same input group as the reader. - Verify that the input group Delay Time is set to 0 seconds. - Verify that the exit button is enabled (using the DOORS form). - Verify that the exit button DI is selected (using the DOORS form).
Main Menu: An operator has missing items on the Picture Perfect program.	- Verify the operator’s Permission. - Verify that the Permission has the appropriate menu items enabled (FIND, VIEW, UPDATE).
Alarm: Multiple DIs on the same micro trigger, but only one input gives an alarm.	- Verify the input group assigned to each input. - Verify that each input has its own input group in order to report separately.

Table 33-1: Troubleshooting Chart (Continued)

Problem	Action
Printer: Cannot select the printer to print.	- Verify that the printer is set up/defined in the operating system. - Verify that the printer is known to Picture Perfect. - Verify that the printer is cabled, powered, and online.
Workstation: The screen is black.	- Move the mouse pointer to awaken the terminal if it is in hibernation (screen-saver function). - Verify that the terminal is cabled, terminated, powered, and booted.
Form: Cannot save the record; there is no SAVE button.	- Operator Permission is FIND only for this form.

Changing the Picture Perfect System Host Name

Appendix A

Although it is not recommended to change the host name or IP address of a Picture Perfect system, the steps detailed in this section must be followed in order to do so. These steps apply to Picture Perfect standalone systems, Picture Perfect Enterprise host/subhost systems, and Picture Perfect Redundant systems. Before beginning, review the rules and restrictions listed below.

Rules and Restrictions

- (All Systems) The **`chhostname`** program must be run as **`root`**.
- (All Systems) If your Picture Perfect System uses a name server, then the network administrator will have to update the name server.
- (All Systems) Picture Perfect must not be running when the **`chhostname`** program is invoked.
- (Enterprise Network Host and Subhost Systems) Picture Perfect must be running on each remote machine. If you want **`chhostname`** to update the remote files, add the "hostname" of the machine whose name is being changed to **`/.rhosts`** file on all remote machines. Or, you can choose to update the remote files manually. See the *Picture Perfect Enterprise System Guide* for more details on verifying the host names and IP addresses in the system.
- (Redundant Systems) Picture Perfect must be running on the other machine. If the other machine is not up, then it will have to be updated manually. See the *Picture Perfect Redundant System Administration Guide* for more details on verifying the host names and IP addresses in the system.

Changing the Host Name

1. Log in to the console as **root**.

2. Make sure Picture Perfect is not running.

   #. /cas/bin/profile Enter

3. Run the program to change the host name and/or IP address by typing at the # prompt:

   chhostname Enter

   The following shows an example of how to change the host name on a subhost in a Picture Perfect Network System. All text in italics represents text that was typed in.

```
# chhostname Enter
chhostname (Version 1.2)


Starting up informix..OK
This is a STANDALONE system
Host Name..........: triton
IP Address.........: 192.9.200.70
Network Interface..: en0


Enter new host name  [triton       ]: tritonhost Enter
Enter new IP address [192.9.200.70 ]: Enter
Are these values correct (y/n) [n]? y Enter
Changing triton to tritonhost
IP address is unchanged
Updating my /cas/db/etc/onconfig
Updating my /cas/db/eh/sqlhosts
Updating my /etc/hosts
Upating my /eh/services
```

4. Reboot the system.

5. If the machine is part of a Picture Perfect enterprise system or a Picture Perfect redundant system, then all of the other machines in the Picture Perfect system will have to be rebooted.

Files and Database Tables

The **chhostname** program affects the following files and database tables. Unless otherwise specified, files are common to both AIX and Linux platforms.

Standalone

- **/etc/hosts**
- **/etc/services**
- **/etc/sysconfig/network (Linux-specific)**
- **/etc/sysconfig/network-scripts/ifcfg-eth0 (Linux-specific)**
- **/cas/db/etc/onconfig**
- **/cas/db/etc/sqlhosts**
- **/usr/lib/X11/ncd/configs/ncd-std (if the NCD package is installed)**

Network Host

- **/etc/hosts** on all machines
- **/etc/services/** on all machines
- **/etc/sysconfig/network (Linux-specific)**
- **/etc/sysconfig/network-scripts/ifcfg-eth0 (Linux-specific)**
- **/etc/hosti.equiv** on all subhosts
- **/cas/db/etc/onconfig** on local machine
- **/cas/db/etc/sqlhosts** on all machines
- **/.rhosti** on all subhosts

For Linux, the above line should read: **/root/.rhosti** (on all subhosts)

- **/home/<loginid>/.rhosts** of System Administration operators
- host table on all machines
- **/usr/lib/X11/ncd/configs/ncd-std (if the NCD package is installed)**

Network Subhost

- **/.rhosti** on network host

For Linux, the above line should read: **/root/.rhosti** (on all subhosts)

- **/etc/hosti.equiv** on network host
- **/etc/hosts** on all machines
- **/etc/sysconfig/network (Linux-specific)**
- **/etc/sysconfig/network-scripts/ifcfg-eth0 (Linux-specific)**
- **/etc/services** on all machines
- **/cas/db/etc/onconfig** on local machine
- **/cas/db/etc/sqlhosts** on all machines
- host table on all machines
- **/usr/lib/X11/ncd/configs/ncd-std (if the NCD package is installed)**

Redundant

- **/etc/hosts**
- **/etc/services** on both machines
- **/etc/sysconfig/network (Linux-specific)**
- **/etc/sysconfig/network-scripts/ifcfg-eth0 (Linux-specific)**
- **/etc/sysconfig/network-scripts/ifcfg-eth1 (Linux-specific)**
- **/cas/db/etc/onconfig**
- **/cas/db/etc/sqlhosts** on both machines
- **/.rhosts** on other host

For Linux, the above line should read: **/root/.rhosts** (on all subhosts)

- **/etc/hosts.equiv** on other host
- host table on both machines
- **/usr/lib/X11/ncd/configs/hexfiles** need to be regenerated **(if the NCD package is installed)**
- **/cas/bin/profile** on other host (RMACH)
- **/cas/db/text/fpp***

TPS Alarms

Appendix B

Overview

TPS Alarms are a feature that allow a Picture Perfect system to indicate that there is a problem with one or more of the TPS processes. By default, TPS generates an alarm every time a TPS process respawns.

The following TPS processes trigger an alarm when respawned:

- **almmgr**
- **bdgmgr**
- **dbmgr**
- **oprmgr**
- **prmgr**
- **rcvmgr**
- **rsndmgr**
- **schmgr**
- **sndmgr**
- **stsmgr**
- **evtmgr**
- **maamgr**

TPS expects these processes to run without exiting until TPS is shut down. If one of these TPS processes respawns, then the administrator should investigate the problem. The log files should contain an entry indicating that a TPS process respawned. The alarm generated serves as an additional warning that there is a problem with the system.

There are other TPS processes that respawn under normal operation:

- **snddrv**
- **rcvdrv**
- **moddrv**
- **dialer**

- **nwmdrv**
- **cfgmgr**

The base package installation program inserts a single alarm, **TPS RESPAWNED**, into the alarm table when Picture Perfect is installed. The base package installation program also creates an input group for each TPS process that is not supposed to respawn.

NOTE Some system problems, such as shared memory corruption or **almmgr** crashes, can prevent TPS alarms from being generated.

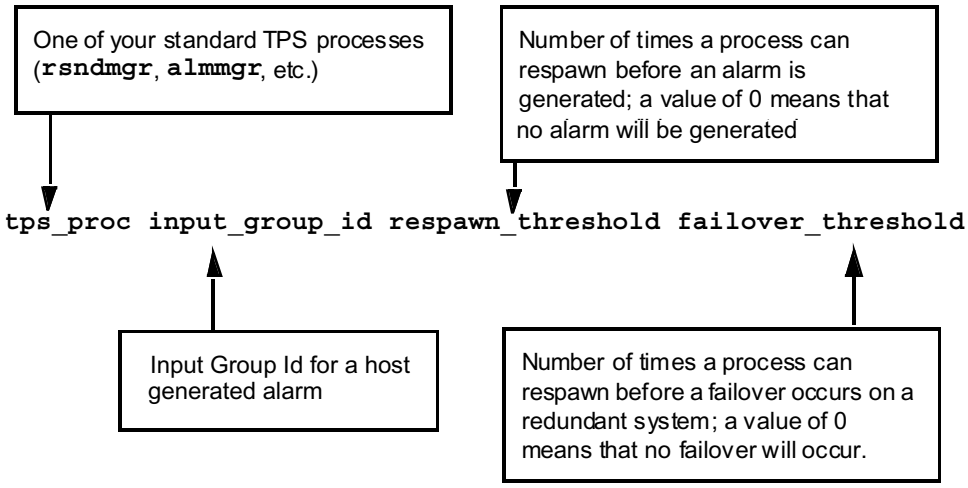
Configuration Files

/cas/db/text/tps.cfg

A configuration file, **/cas/db/text/tps.cfg,** stores the input group associated with each TPS process. It also stores two other configuration parameters. The two parameters specify a respawn threshold and a failover threshold.

The respawn threshold indicates how many times a TPS process must respawn before an alarm is generated. By default, this value is set to **1.** The failover threshold indicates how many times a TPS process must respawn before a primary machine in a redundant configuration fails over to the backup. The backup machine also uses this value to shut itself down and disable failover if a TPS process has exceeded the failover threshold. The default value is **3**, but in a non-redundant system, TPS ignores this value.

The following format is used in the TPS Alarm Process configuration file:


One of your standard TPS processes (rsndmgr, almmgr, etc.)
Number of times a process can respawn before an alarm is generated; a value of 0 means that no alarm will be generated
tps_proc input_group_id respawn_threshold failover_threshold
Input Group Id for a host generated alarm
Number of times a process can respawn before a failover occurs on a redundant system; a value of 0 means that no failover will occur.

/cas/db/text/tps.cfg.sample

This is an un-initialized sample configuration file containing the TPS processes that are not designed to respawn. Processes, such as **nwmdrv**, **snddrv**, etc., are designed to respawn and therefore will not be included in this file.

/cas/bin/tps_cfg.sh

This shell script will create a TPS alarm and input groups for the TPS processes listed in the sample configuration file. This program can only run if the **/cas/db/text/tps.cfg** file does not exist.

NOTES

Firewall Configuration

Appendix C

This appendix describes the ports used by the Picture Perfect system, and how to configure your system for use through a firewall.

In order to establish communications through a firewall, it is necessary to allow for the appropriate protocols to pass through the firewall on the appropriate ports. Listed below are the ports used by the various components of the Picture Perfect system. Depending on the Picture Perfect components you have implemented, you will have to configure the appropriate ports. To ensure that the security of your firewall is not compromised, only open those ports needed for your specific system configuration.

Table C-1: Task Descriptions and Port Number Assignments

Task Description	Protocol	Port Number Assignment
Access Vision Picture Perfect host client server task rpc.pcsrvd	TCP	Dynamically assigned by the vendor operating system, portmapper task, but must be set to a fixed value to penetrate a firewall (see “Setting a Fixed Port for the Client Server Task” on page C.2).
Access Vision Picture Perfect host license manager server task Imgrd	TCP	Fixed value of ‘6769’ but can be changed at customer site (see “Changing the Fixed Port Used by the License Manager Task” on page C.2).
Picture Perfect Host vendor operating system portmapper task	UDP/TCP	Fixed value of ‘111’ that cannot be changed.
Standard Picture Perfect Web Browser	HTTP	Usually set to a value of ‘3144’ (see “Web Browser Security” on page C.3).
Picture Perfect SSL (Secure Socket Layer) Web Browser	HTTP	Usually set to a value of ‘5307’ (see “Web Browser Security” on page C.3).
Micro/5 PXN Communications	TCP	Fixed value of ‘6767’.
Micro/5 PXN DES key exchange	TCP	Fixed value of ‘6768’.
Micro/5 Flash Download	TCP	Fixed value of ‘7777’.

Setting a Fixed Port for the Client Server Task

The customer security group must choose a fixed port number (typically between 5000 and 8000) for this communication path. For the purposes of explaining the procedure let us assume that port 5555 was chosen. Follow this procedure to set a fixed port for the client server task:

1. Log onto the host Picture Perfect system as the root user and shut down Picture Perfect by entering:

   `rc.pperf -k`

2. Edit the **`/etc/services`** file with any editor such as **`vi`** or **`emacs`**.

3. Go to the bottom of the file and enter the following line: **`pcsrv 5555/tcp`** where 5555 is the chosen port number. The line should look similar to the others in that file.

4. Exit the editor saving the changes.

5. Reboot the system.

Changing the Fixed Port Used by the License Manager Task

The customer security can use the existing fixed port value of 6769 for access through the firewall. If that value is not acceptable a different value can be used by following the procedure below. For purposes of explaining the procedure let us assume that port 8888 was chosen.

1. Log onto the host Picture Perfect system as the **`root`** user while Picture Perfect is running.

2. Enter the command **`query tps_daemons`** to locate the entry that starts the client server task. The entry should look like this:

   `181 /etc/lmgr/lmgrd R A 19990908 142026`

   The first number on the line (181 in this example) is the record id that will be used in the next step.

3. Enter this command:

   `/cas/bin/sqlstmt "UPDATE tps_daemons SET pathname='/etc/lmgr/lmgrd -p 8888' where id=181"`

where 8888 is the chosen port number and 181 is the record id obtained from the previous step.

4. Shut down Picture Perfect by entering:

```
rc.pperf  -k
```

5. Restart Picture Perfect by entering:

```
rc.pperf
```

Perform a Picture Perfect database backup as soon as possible to save the change made to the **tps_daemons** database table. This procedure may have to be repeated whenever an Access Vision server patch is installed on the Picture Perfect host system or if the Access Vision software is completely removed and then re-installed.

Web Browser Security

It is recommended that SSL be used when firewall traversal is required. In this case the SSL port (usually 5307) should be opened, as well as the ports necessary for HTTP traffic (usually port 80). For more information on port number assignments using the Picture Perfect Web Browser, consult Chapter 5 of the *Picture Perfect Web Browser Interface Operator's Guide.*

NOTES

Advanced Configuration

Appendix D

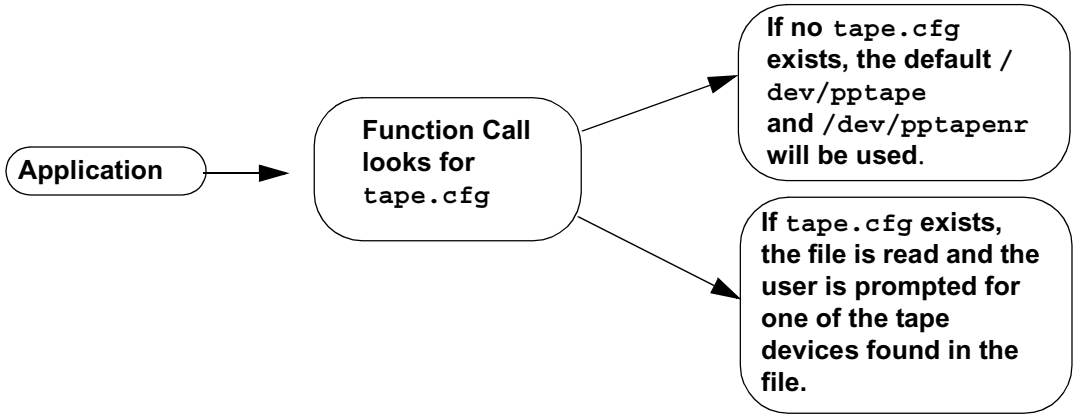
Overview

This chapter provides information on advanced options that may be configured at the time of installation. Some of these options are already configured by default, but you may wish to modify the settings. Other options are not configured, but you may wish to implement them. Each of the options will be discussed in more detail in the following sections.

Multiple Tape Support

This option enables your Picture Perfect system to support multiple tape devices. During installation of the Picture Perfect **base** package, a shell script, **`pptapesetup`**, is run which creates links to two tape devices. By default, the rewind device is **`/dev/pptape`** and the no rewind device is **`/dev/pptapenr`**. If your system has only one tape device, do not change these default settings. If more than one tape device is detected by the shell script, an ASCII text configuration file, **`/cas/db/text/tape.cfg`**, is created which contains a tape definition for each tape device on the system. The shell script, **`pptapesetup`**, can be run at any time to reconfigure the tape devices on your Picture Perfect system.

If multiple tape devices are present on the system, the default will depend upon the application accessing the tape device. When an application attempts to access a tape device, the application searches for a **`tape.cfg`** file. If it does not find the file, the default tape devices **`/dev/pptape`** and **`/dev/pptapenr`** are used. If a **`tape.cfg`** file is found, the file is read and you will be prompted for one of the tape devices found in the file.


Application
Function Call looks for tape.cfg
If no tape.cfg exists, the default /dev/pptape and /dev/pptapenr will be used.
If tape.cfg exists, the file is read and the user is prompted for one of the tape devices found in the file.

For each tape device on the system, **tape.cfg** contains a description of the tape device, the rewind device name, the no-rewind device name and the application types that will use this device as the default. Each application will use one of the following as its default type: **INSTALL, ARCHIVE, HISTORY, BACKUP,** or **RESTORE**. If no tape device is configured in the **tape.cfg** file as the default for a particular application type, the system defaults **/dev/pptape** and **/dev/pptapenr** will be used.

Port Throttling

When bringing Picture Perfect up, sites with a large number of micros, or micros that have accumulated an unusual amount of history, can overload the host if they are all brought online simultaneously. Port throttling is an activity performed by TPS, the microcontroller communication program, when the system starts up. Before enabling a port, TPS checks the system activity and determines if the system is too busy to bring more ports online. By gradually bringing the ports online, TPS prevents a flood of information coming in from the micros which could potentially cause the host to back up and go into an XOFF communication state.

The configuration file, **throttle.cfg**, for port throttling is found in **/cas/db/text** and the parameters are:

Table D-1: Port Throttling Parameters

THROTTLE_DELAY	The number of seconds before enabling a port. For example, **THROTTLE_DELAY=5**
THROTTLE_MAX	The maximum number of messages on queues allowed in order to throttle on the next port. Any number of messages greater than this value will prevent the next port from being enabled. For example, **THROTTLE_MAX=100**

To find the total number of ports that have not been enabled, use the following command:

```
smutl -p -1|grep THROTTLE
```

Once all ports are throttled on, they cannot be throttled off.

Disk File Backup/Archive Configuration

Although they ***cannot*** replace tape backups and archives, disk file backups offer a fast way to backup/restore database tables and run history reports.

Table D-2: Disk File Backup Configuration

ARCHIVE_DIR	Specifies the default directory that stores history archives. This directory must exist and should be set up to have sufficient space to hold archive files. For example: **ARCHIVE_DIR=/cas/archive**
ARCHIVE_EXT	Specifies the default file extension that the file selection dialog matches for archive files. For example: **ARCHIVE_EXT=.arc**
BACKUP_DIR	Specifies the default directory that stores backups. This directory must exist and should be set up to have sufficient space to hold backup files. For example: **BACKUP_DIR=/cas/backup**
BACKUP_EXT	Specifies the defaults file extension that the file selection dialog matches for backup files. For example: **BACKUP_EXT=.bak**

File System Monitor

The **File System Monitor** detects when a file system reaches a maximum usage level. When it reaches this level the Monitor notifies the operators on the system using a popup message similar to the one below and an alarm is generated. Once the operator is notified, the system administrator will need to take the necessary steps to resolve the problem.

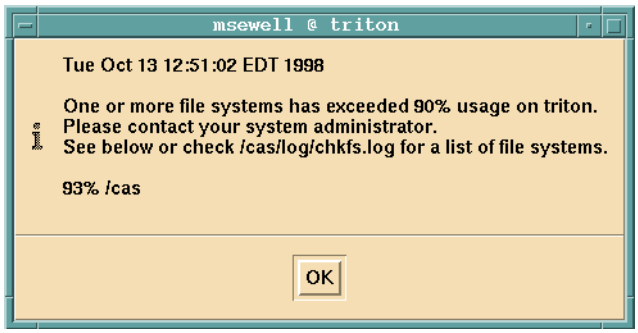

msewell @ triton
Tue Oct 13 12:51:02 EDT 1998
One or more file systems has exceeded 90% usage on triton.
Please contact your system administrator.
See below or check /cas/log/chkfs.log for a list of file systems.
93% /cas
OK

Figure D-1. File System Monitor Notification Message

By default, the **File System Monitor** is configured to check the **`/cas/log`** file system every 10 minutes. If the **`/cas/log`** file system reaches 90% usage, a popup message will be displayed on all terminals in the terminal table. The following files are used in the configuration of this feature:

`/cas/bin/chkfs.sh`

A shell script that determines if any file systems exceed a given usage percentage. The output is written to **`/cas/log/chkfs.log`**.

To run this script, log in as root and type **`chkfs.sh`** followed by the filesystem names. If no file system is specified, it will check **`/cas/db/text/chkfs.cfg`**. If no file system is specified in **`chkfs.cfg`**, the default will be to check all file systems.

`/cas/db/text/chkfs.cfg`

A configuration file containing the following parameters:

Table D-3: File System Monitor Configuration

MAXUSAGE	A global usage percentage which a file system must exceed For example: **MAXUSAGE=90**
FS	A list of file systems that are checked For example: **FS=/cas/log/tmp**
MSG	A message displayed in the popup For example: **MSG=Your file system has exceeded 90% utilization.**
INGRP	An input group record id for an alarm generated (set up by default) For example: **INGRP=20**

/cas/bin/infopopup

A binary file that extracts the message to be displayed on the popup.

/cas/db/text/cron.tab

Runs **chkfs.sh** every 10 minutes.

/cas/bin/almsim

A binary file that generates the alarm for **chkfs.sh**.

/cas/bin/terminalpopup

A shell script that determines which terminals are defined in the database and calls **infopopup** for each of these terminals.

Database Space Monitor

The **Database Space Monitor** detects when a database space reaches a maximum usage level. When it reaches this level the Monitor notifies the operators on the system using a popup message similar to the one below and an alarm is generated. Once the operator is notified, the system administrator will need to take the necessary steps to resolve the problem.

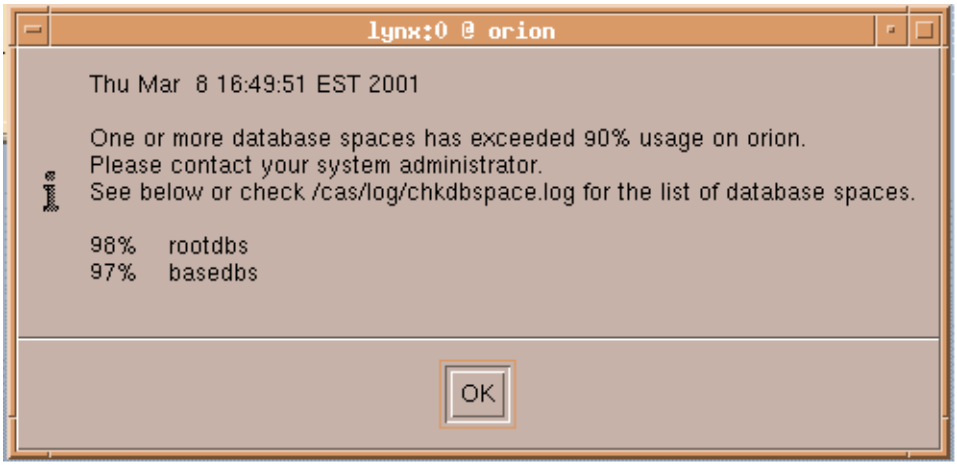

lynx:0 @ orion
Thu Mar 8 16:49:51 EST 2001
One or more database spaces has exceeded 90% usage on orion.
Please contact your system administrator.
See below or check /cas/log/chkdbspace.log for the list of database spaces.
98% rootdbs
97% basedbs
OK

Figure D-2. Database System Monitor Notification Message

By default, the **Database Space Monitor** is configured to check all of the database spaces on the system once an hour at 5 minutes past the hour. If a database space reaches 90% usage, a popup message will be displayed on all terminals in the terminal table. The following files are used in the configuration of this feature:

`/cas/bin/chkdbspace.sh`

A shell script that determines if any database space exceeds a given usage percentage. The output is written to **`/cas/log/chkdbspace.log`**.

To run this script, log in and type **`chkdbspace.sh`** followed by the database space names. If no database space is specified, it will check **`/cas/db/text/chkdbspace.cfg`**. If no database space is specified in **`chkdbspace.cfg`**, the default will be to check all database spaces.

`/cas/db/text/chkdbspace.cfg`

A configuration file containing the following parameters:

Table D-4: Database System Monitor Configuration

MAXUSAGE	A global usage percentage which a database space must exceed For example: **MAXUSAGE=90**
DBSPACE	A list of database spaces that are checked For example: **DBSPACE=rootdbs basedbs ucsdbs**
MSG	A message displayed in the popup For example: **MSG=Your database space has exceeded 90% utilization.**
INGRP	An input group record id for an alarm generated (set up by default) For example: **INGRP=20**

/cas/bin/infopopup

A binary file that extracts the message to be displayed on the popup.

/cas/db/text/cron.tab

Runs **chkdbspace.sh** every hour at 5 minutes past the hour.

/cas/bin/almsim

A binary file that generates the alarm for **chkdbspace.sh**.

/cas/bin/terminalpopup

A shell script that determines which terminals are defined in the database and calls **infopopup** for each of these terminals.

Resend List State

In order to avoid lost messages from the host to micros when the system is taken down, this feature preserves the state of the resend list. Before using this option, review the following restrictions:

- This feature is only supported in stand-alone and subhost systems.
- Only messages with valid micro destinations will be saved and restored. Messages sent to hosts will not be saved.
- Micros which are configured for offline will not have their messages restored.

Configuration

The Resend List State feature can be configured in the **/cas/db/text/resend.cfg** file using the following options:

saveresend

This option can be set to **auto** or **manual**.

- **auto**
  The resend list will be saved automatically when Picture Perfect is brought down.
- **manual**
  The resend list will be saved only if the **-r** parameter is used with the command **rc.pperf**.
  For example: **rc.pperf -k -r**

restoreresend

This option can be set to **auto** or **manual**.

- **auto**
  The resend list will be restored automatically when Picture Perfect is brought up.
- **manual**
  The resend list will be restored only if the **-r** parameter is used with the command **rc.pperf**.
  For example: **rc.pperf -s -r**

resendfile

This option can be used to override the default file, **/cas/log/tps.resend**, which stores the resend list. One reason for overriding the default would be to eliminate problems associated with disk space. If there is not enough free disk space to write out the resend list, its contents will be lost.

ignore

By default, the following message types will not be saved or restored: **OUT, STS, MNT, SYN, ENQ**. These messages are not saved or restored because they do not update the micro's database. The **ignore** option can be used to override the default list of ignored messages. The list of messages must be separated by spaces and can be in text or numeric form. Knowledge of the Picture Perfect message types is required to use this option.

Log Messages

The following messages may be displayed in the file **/cas/log/log.MMDD**:

failed to save resend list

This message will be displayed if the entire resend list could not be written to the file; the resend list file will subsequently be removed.

resend list (*n* messages saved, *m* ignored)

This message will be displayed if the entire resend list was successfully written out to the disk.

resend list (*n* messages restored, *m* ignored)

This message will be displayed if the resend list is restored when TPS starts.

Alarm Save State

In order to avoid lost alarm messages stored in the alarm buffer when the system is taken down, this feature preserves the state of the alarm buffer. Before using this option, review the following restrictions:

- This feature will only run on the primary host in a redundant system, a subhost, or a standalone host.
- Restored alarms are not checked for validity, and may need to be manually purged if the state of the system has changed, for example if a subhost has been added or deleted.

Configuration

The Alarm Save State feature can be configured in the **/cas/db/text/almsave.cfg** file using the following options:

savealarms

This option can be set to **auto** or **manual**.

- **auto**
  The alarms in the alarm buffer will be saved automatically when Picture Perfect is brought down.
- **manual**
  The alarms in the alarm buffer will be saved only if the file **/cas/log/tps.almsave.manual** exists.

  To create this file type: **touch /cas/log/tps.almsave.manual.**

  This must be done before Picture Perfect is stopped, or alarms will not be saved.

NOTE

The file **/cas/log/tps.almsave.manual** will be removed after any save or restore of the alarm buffer.

restorealarms

This option can be set to **auto** or **manual**.

- **auto**
  The alarms in the alarm buffer will be restored automatically when Picture Perfect is brought down.
- **manual**
  The alarms in the alarm buffer will be restored only if the file **/cas/log/tps.almsave.manual** exists.

  To create this file type: **touch /cas/log/tps.almsave.manual**

  This must be done before Picture Perfect is restarted, or alarms will not be restored.

NOTE

The file /cas/log/tps.almsave.manual will be removed after any save or restore of the alarm buffer.

alarmsfile

This option can be used to override the default file, **/cas/log/tps.alarms**, which stores the buffered alarm messages. One reason for overriding the default would be to eliminate problems associated with disk space. If there is not enough free disk space to write out the list of buffered alarm messages, its contents will be lost.

Log Messages

The following messages may be displayed in the file **/cas/log/log.MMDD**:

saved <n> alarms to file <filename>

This message will be displayed if the entire list of buffered alarm messages was successfully written out to the disk.

Cannot open file <filename> to save alarms

This message will be displayed if the entire list of buffered alarms could *not* be written to the file; the **almsave** file will subsequently be removed.

Error saving alarms to file <filename>

This message will be displayed if the entire list of buffered alarms could *not* be successfully written to the file; the **almsave** file will subsequently be removed.

alarm buffer(<n> alarms restored)

This message will be displayed if the list of buffered alarm messages *is* restored when TPS starts.

alarm buffer(<file> was corrupt; 0 alarms restored)

This message will be displayed if the list of buffered alarm messages could *not* be restored when TPS starts.

Auto-Logout (xidle)

This feature provides a mechanism for logging operators off of their X Terminals if there is an extended period of inactivity. Operator activity can be achieved by any of the following three events:

- Mouse movements
- Button clicks
- Keystrokes

By default, the auto-logout feature is disabled. The auto-logout feature will have to be configured before it can be used. The required configuration can apply to all Picture Perfect operators (global), or it can apply to individual operators. If an X Terminal has been idle for a given amount of time, then the *xidle* program will close the current login session. The *xidle* program can be configured to warn the operator before actually terminating the session. The warning comes in the form of an audible bell and a popup window.

Files

/cas/bin/xidle

This program implements the auto-logout feature. It runs every time an operator logs in and is controlled by the following X resource values:

- logout

  This value can be either **True** or **False**. If it is set to **False** (default), then the auto-logout feature is disabled. If it is set to **True**, then the **xidle** program uses the following resource values: **maxIdle** and **maxWarn**.

- maxIdle

  This value specifies the number or seconds of inactivity on an X Terminal before the operator is logged out. If this value is not specified, then it defaults to 10 minutes.

- maxWarn

  This value specified the number of seconds that an operator will be warned before auto-logout occurs. If this value is not specified, then it defaults to 30 seconds.

/usr/lib/X11/app-defaults/XIdle

This file is used to control the auto-logout on a global basis. This file must be created with the resource values set correctly in order to affect all Picture Perfect operators. The following lists the entries from a sample file:

```
xidle.logout: True
xidle.maxIdle: 600
xidle.maxWarn: 30
```

$HOME/.Xdefaults

The file is used to control the auto-logout on an individual basis. This file must be created in an operator's home directory (**$HOME**) with the resource values set correctly. It should be noted that the values found in this file will override the values found in the **xidle** resource file. The following lists the entries from a sample file for an operator who has been given a longer idle time:

```
xidle.logout: True
xidle.maxIdle: 1200
xisle.maxWarn: 30
```

Restrictions

It should be emphasized that the **xidle** program detects activity based upon mouse and keyboard events. Therefore, the following activities may be inadvertently terminated due to the potential for idle time:

- Monitoring alarms / activity
- Running reports
- Performing backups / restores

It is recommended that operators who perform these actions either disable auto-logout or increase the individual's idle resource value.

Also, the **xidle** program only supports the capability to log an operator off of an X Terminal. It does not support the capability to lock the screen and then prompt the user for a password to gain access to the X Terminal.

NOTES

Using the vi Editor

Appendix E

Overview

The **`vi editor`** is a full-screen editor. While there are several editors available in a Unix environment, **`vi`** is a standard editor available on every Unix system.

Modes

The **`vi editor`** has 3 modes: **Command**, **Insert**, and **Ex**.

- **Command:** When you enter the **`vi editor`** you are in **Command** mode. **Command** mode allows you to move around the document.
- **Insert:** Allows you to insert text.
- **Ex:** Used for special operations, such as saving a file and exiting.

Changing Modes

The following table provides a quick reference to the key strokes required to change from one mode to another.

Table E-1: Mode Change Key Strokes

FROM Mode	Key Stroke	TO Mode	Explanation
Command	i	Insert	Allows you to enter text at the cursor
Command	a	Insert	Allows you to enter text after the cursor
Command	o	Insert	Adds a blank line below the current line
Command	O	Insert	Adds a blank line above the current line
Insert	ESC	Command	Allows you to enter command mode

Table E-1: Mode Change Key Strokes

FROM Mode	Key Stroke	TO Mode	Explanation
Command	:	Ex	Allows you to enter an Ex command.

Command Mode Functions

The following tables lists some of the functions available when in Command mode.

Table E-2: Command Mode Functions

Function	Key Stroke
Insert text in front of cursor	i
Append text after cursor	a
Move down one cursor position	j
Move up one cursor position	k
Move left one cursor position	h
Move right one cursor position	l
Undo last change	u
Undo all changes to current line	U
Save file and exit	ZZ
Go to beginning of next line	+
Go to beginning of current line	0
Go to beginning of file	1G
Go to end of file	G
Scroll Forward one page	Ctrl-f
Scroll back one page	Ctrl-b
Delete current line	dd

Ex Mode Functions

The following tables lists some of the functions available when in **Ex** mode.

Table E-3: Ex Mode Functions

Function	Key Stroke
Quit without saving	q!
Save and Quit	wq

Editing the /etc/hosts File

Follow the steps below to add the internet addresses of the Host machine and one for the Workstation.

1. At the system console, login as root.

2. To open the **`/etc/hosts`** file using **`vi`**, type: **`vi /etc/hosts`**

   Result: The beginning of the file will display. You can enter the address anywhere in the file but to make the file understandable, add the address in order.

3. To move forward one screen at a time, press Ctrl and f. Continue pressing Ctrl f until you have reached the correct section.

4. Move to the line where you would like to enter the address. You can enter the address above or below this line.

5. To insert a blank line …
   ABOVE, press Shift o

   BELOW, press o

6. At the blank line enter the name and address (or address and name depending on the current format of your file).

7. Press the Esc key to move from Insert mode to Command mode.

8. Repeat steps 4. to 7. for each address you need to enter. Remember: you need one address for the Host and one for each Workstation.
   When you have completed entering all addresses, type: **`ZZ`** Enter

   Result: This will save the changes to the file and exit the **`vi editor`**.

NOTES

Alarm Routing and Bumping Using Picture Perfect Web Browser

Appendix F

Overview

The Picture Perfect alarm monitor routing feature allows administrators to specify, per alarm, which X-terminals receive the alarm notification.

With the introduction of Picture Perfect Web browser, terminal definitions became virtual Web clients (called unix:10, unix:11, and so on) and are not assigned to a specific PC workstation, but rather to an operator session. Each time an operator logs in, the next available virtual terminal is assigned to that operator for that session. The concept of virtual terminals is what makes it possible to log in to Picture Perfect using a Web browser from any PC on the network. As a result of this change in terminal definitions, routing alarms to specific terminals was no longer meaningful because there was no way to know which operator is using which virtual terminal at any given time.

The Picture Perfect 2.0 Web Browser Version 1.4 allows you to control which virtual terminal is assigned to each operator, and therefore route Picture Perfect alarms to specific *operators*.

The following example shows a Picture Perfect system with three terminals:

The terminal setup using traditional X-emulation terminals:

```
1.Description:   Johns PC.      Server: johnpc:0
2.Description:   Marys PC.      Server: mary:0
3.Description:   Susans PC.     Server: ssmith:0
```

The same system using Web browser terminals:

```
1.Description:  Web Client 1.   Server: unix:10
2.Description:  Web Client 2.   Server: unix:11
3.Description:  Web Client 3.   Server: unix:12
```

NOTE

For a Picture Perfect Enterprise Host, primary or backup Redundant Host, you define the terminal to use the host name of the server. For example, if the Picture Perfect server name is `pphost`, you should define the terminals as **`pphost:10, pphost:11, pphost:12.`**

With the latest version of the Picture Perfect Web Browser, you can assign an operator to a virtual terminal, and therefore route Picture Perfect alarms to specific operators.

Continuing from the previous example, the terminal definitions now look like this:

```
1. Description:  Johns Web Client.   Server: unix:20
2. Description:  Marys Web Client.   Server: unix:21
3. Description:  Susans Web Client.  Server: unix:22
```

NOTE

For a Picture Perfect Enterprise Host, primary or backup Redundant Host, you define the terminal to use the host name of the server. For example, if the Picture Perfect server name is pphost, you should define the terminals as **`pphost:20, pphost:21, pphost:22.`**

For this example, let's assume that John's Picture Perfect login ID is **`jdoe`**.

The next step is configuring the system to consistently assign the appropriate virtual terminal port number to each operator as follows:

1. As the **`root`** operator, from the command prompt on the Picture Perfect host, change to the appropriate directory by entering:

```
cd /opt/tarantella/bin/
```

2. Create an object for the operator by entering:

```
./tarantella object new_person --name o=organization/cn=jdoe
--surname doe --user jdoe
```

Where **`jdoe`** is the login ID of the Picture Perfect operator.

3. Enter the following command to assign the operator to the virtual terminal port number:

```
./tarantella object edit --name o=organization/cn=jdoe
--scottamindisplay xx --scottamaxdisplay xx
```

Where ***jdoe*** is the login ID of the Picture Perfect operator, and ***xx*** is the port number derived from the terminal record. In this example, you would enter ***20*** for John's Terminal.

Now, every time John logs into Picture Perfect he is assigned **`unix:20`**, and will see alarms routed to that terminal. Repeat these steps for each operator to whom you route alarms. Make sure you *do not* specify the same terminal port number to more than one operator.

NOTE

If you need to remove a terminal assignment from an operator, use the following command:

```
./tarantella object delete --name o=organization/cn=jdoe
```

You can have a combination of user-specific terminals and unassigned terminals that do not require routing or bumping assignments. If you are configuring your system to use a mix of user-specific and unassigned terminals, you must allow for an adequate number of unassigned ports, and specify user-specific port numbers above the number of unassigned ports.

For example, if you need 10 unassigned terminals and three user-specific terminals, you must define the user-specific terminals, at a minimum, as **`:20`**, **`:21`** and **`:22`**, and leave **`:10`** through **`:19`** as unassigned terminals. Not leaving enough ports available for unassigned terminals will cause the user-specific port numbers to be used for unassigned terminals, which will result in denied access for the operators with user-specific terminals.

NOTES

Micro Facility Assignment Tool

Appendix G

Overview

The Micro Facility Assignment Tool allows you to change the facility a micro is assigned along with the inputs, input groups, outputs, output groups, readers and doors for that micro.

NOTE Do not use this utilty if your micro spans multiple facilities.

Running the Tool

➤ **Follow the steps below to run the tool.**

1. Log on as **root** and open a terminal window.

2. Type: **/cas/bin/micfac.sh** Enter

```
Micro Facility Assignment Tool - Version 1.6 7/17/96

Micros: 0 100 1 101 31 32 152 153 154 75
Type a list of micros belonging to 'GLOBAL'
(or press <ENTER> to skip)
```

3. Enter the number of the micro(s) you would like assigned to the facility **Global**. If you plan to enter more than one, separate the micro numbers by a space and press Enter.
   For example, if you wanted to assign micros 31, 32, and 152 to the **Global** facility, you would type:

   ```
   31 32 152 Enter
   ```

   Result: You will be asked to verify your choice of micros.

   For example, to continue with the example started above, this step would result in the following prompt.

   ```
   Micros: 31, 32, 152 -- is this correct? (y/n)
   ```

4. Press: (Y)

   Result: The inputs, input groups, outputs, output groups, readers, and doors associated with all the micros you assigned to the **Global** facility will also be assigned to the **Global** facility.

NOTE All records in Picture Perfect 2.0 are assigned a facility, however, this utility only updates the records of the corresponding devices, such as inputs, input groups, outputs, output groups, readers, and doors. Area and alarm records will have to be updated manually.

   For example, since 31 was the first micro in our previous example, this step would result in the following messages.

```
This may take a long time -- please be patient.

   Updating micro 31 with GLOBAL...
     Updating inputs...
     Updating output...
     Updating reader...
     Updating door...
     Updating micro 31's bdghis_ingrp...
     Updating micro 31's almhis_ingrp...
     Updating micro 31's upstrm_comm_ingrp...
     Updating micro 31's dnstrm_comm_ingrp...
     Updating micro 31's reader_comm_ingrp...
```

   This process would be repeated for each micro that you assigned to the **Global** facility.

5. Upon completion, the remaining micros would be listed and you would be prompted to assign those to the next facility.

6. When all micros have been assigned a facility, the installation is complete. The following messages will display.

```
No micros left to assign.  This utility will now exit.
You may use this tool at any time by typing (as root):
/cas/bin/micfac.sh
```

NOTE Do not use this utilty if your micro spans multiple facilities.

Flow Diagrams

Appendix H

Picture Perfect System Flow Diagram

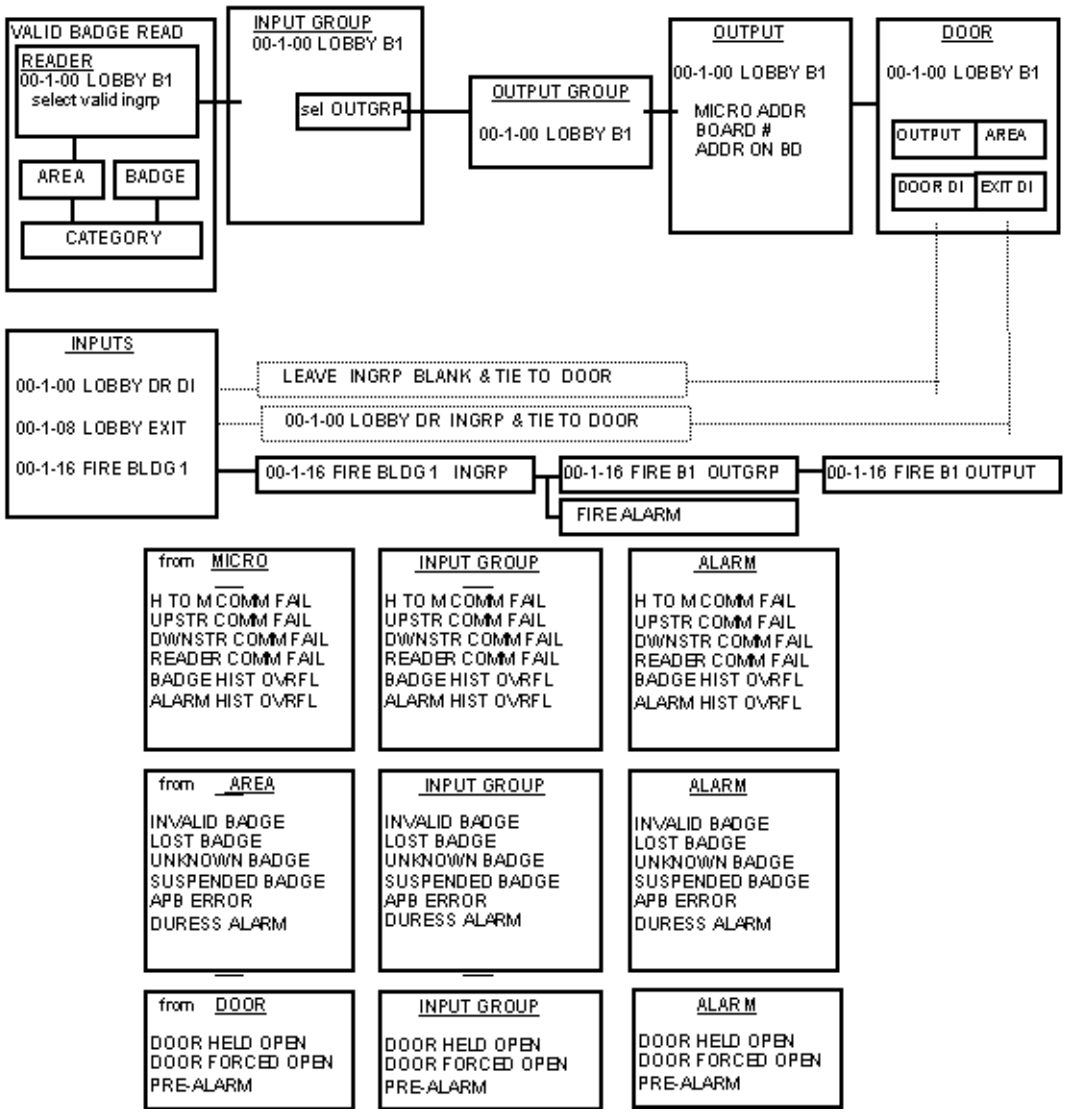


Figure H-1. System Flow Diagram

Picture Perfect Valid Badge Read Flow Diagram

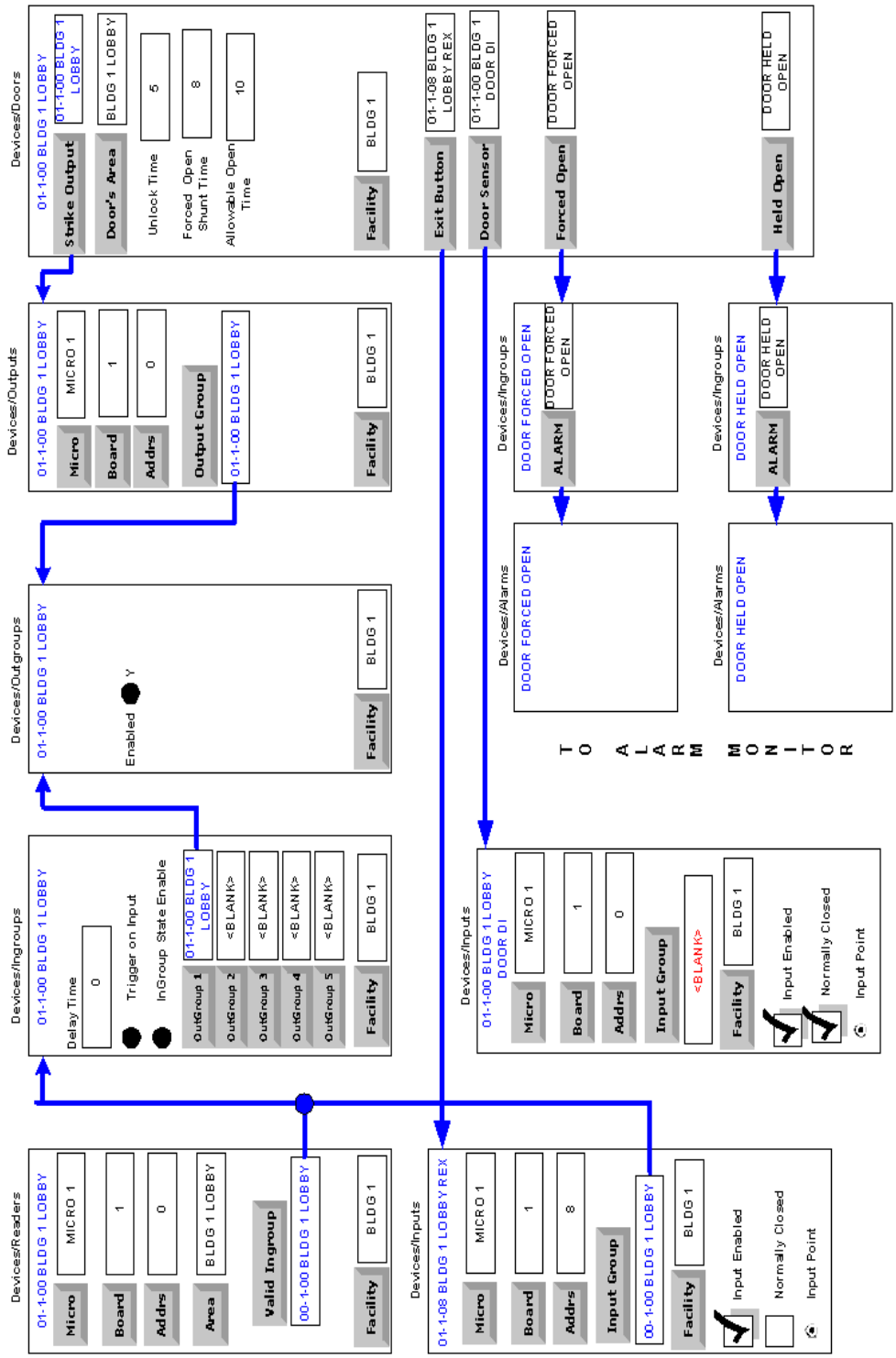


Figure H-2. Valid Badge Read Flow Diagram

Example of a Communications Failure Detected by a Micro

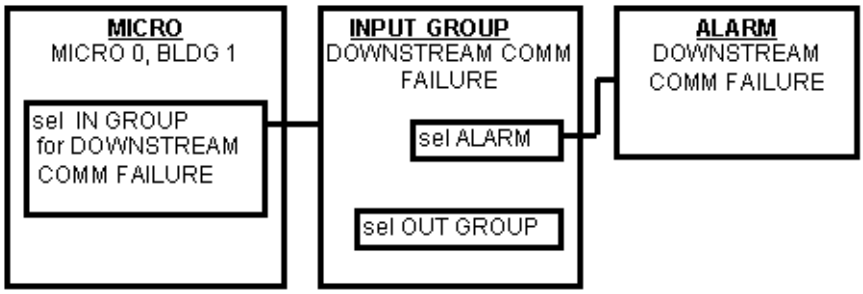


Figure H-3. Comm Failure Detected by Micro

Example of a Bad Badge Detected by an Area

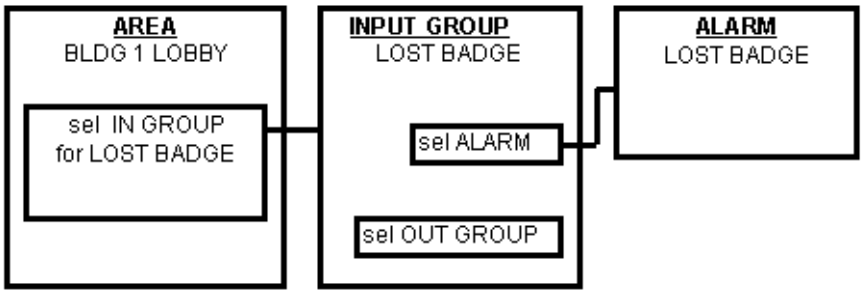
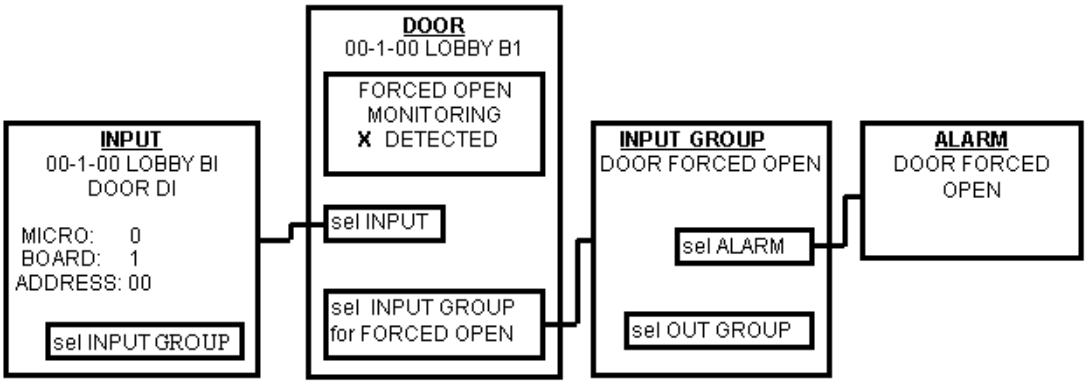


Figure H-4. Bad Badge Detected by Area

Example of a Door Forced Condition Detected by a Door



NOTE:

- An Input Group is not selected on the Input form.
- The use of an Exit Device is recommended.
- The special situation of Supervised Inputs on a 2SRP or 20DI board is covered in the section oon Input Groups.

Figure H-5. Door Forced Condition Detected by Door

Example of a Problem Condition Detected by a Sensor (DI) and Triggering Both an Alarm and a Physical Output (DO)

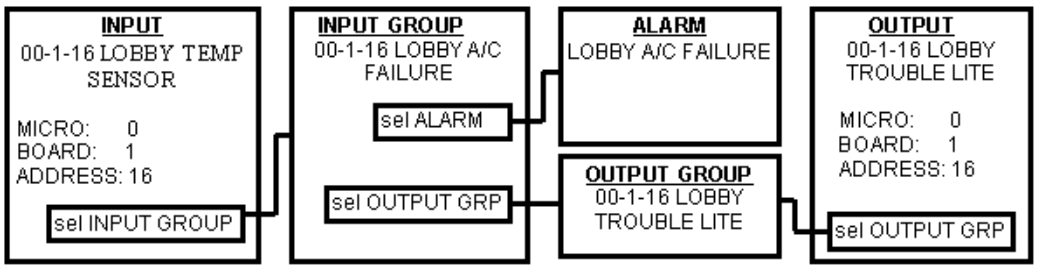
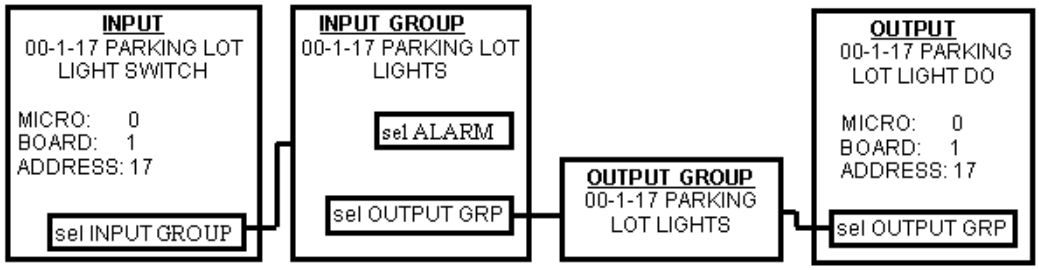


Figure H-6. Problem Condition Detected by Sensor (DI)

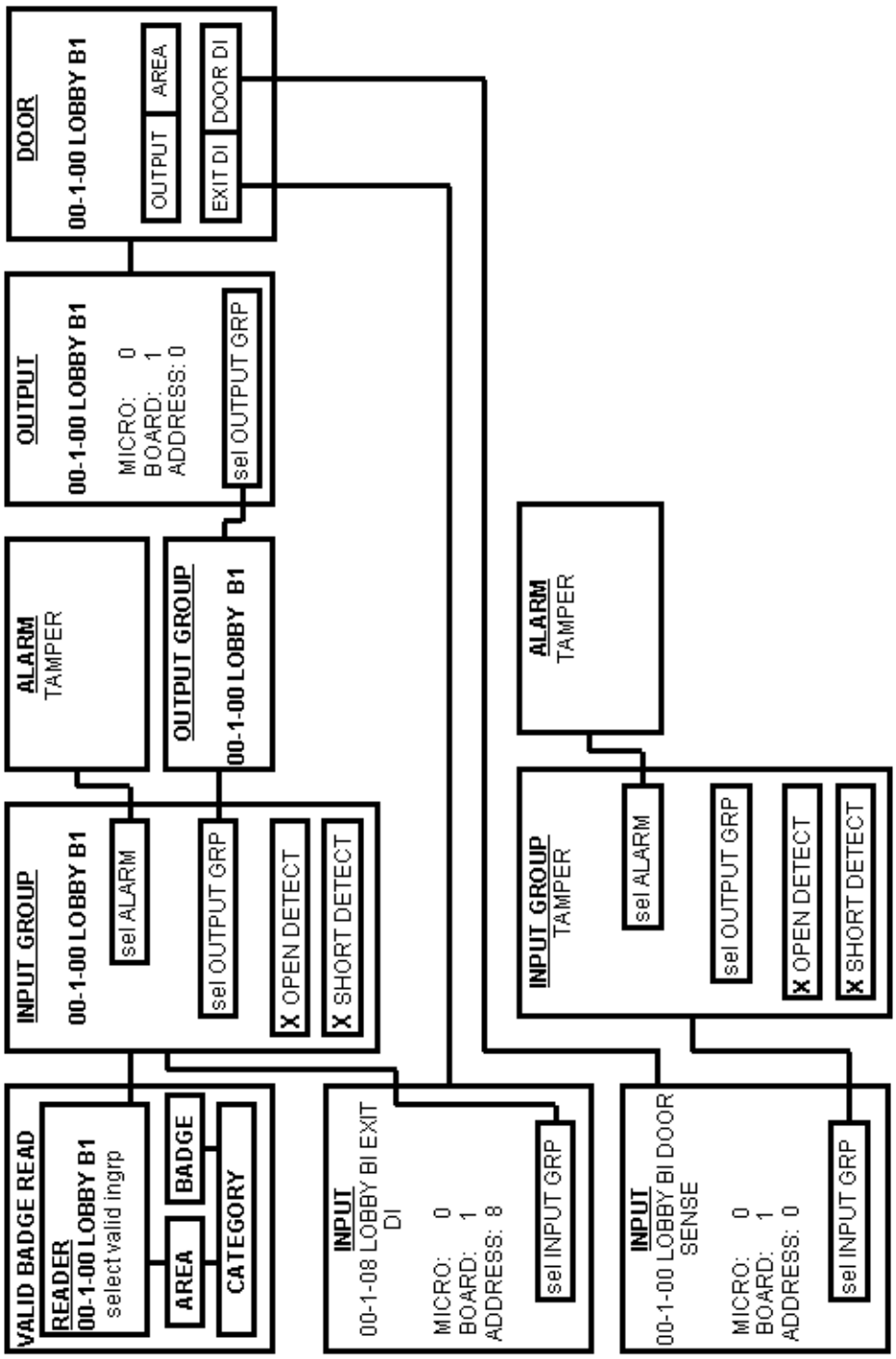
Example of a DI Used to Trigger a Physical Output (DO)



NOTE: A type of schedule called an Output Group Event could also control the parking lot lights in the example above.

Figure H-7. DI Used to Trigger DO

Example of the Door Exit DI and Sense DI Set-Up Using Supervised Inputs to a 2SRP or 20DI



NOTE:When the Picture Perfect software detects a SHORT and OPEN condition on the Input Group:

- A valid badge read or exit request opens the door without triggering the alarm.
- Tampering with either DI triggers the tamper alarm without opening the door.

Figure H-8. Door Exit DI and Sense DI Setup

Alarms Initiated by Micros

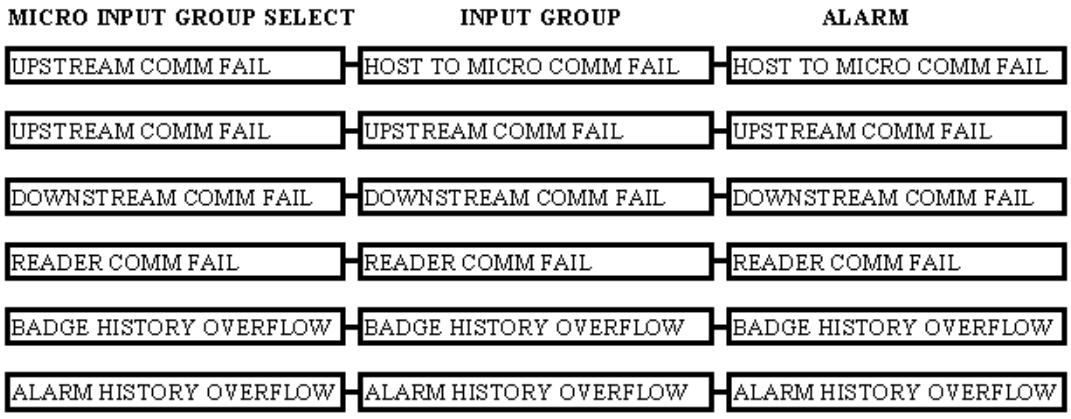


Figure H-9. Alarms Initiated by Micros

Alarms Initiated by Areas

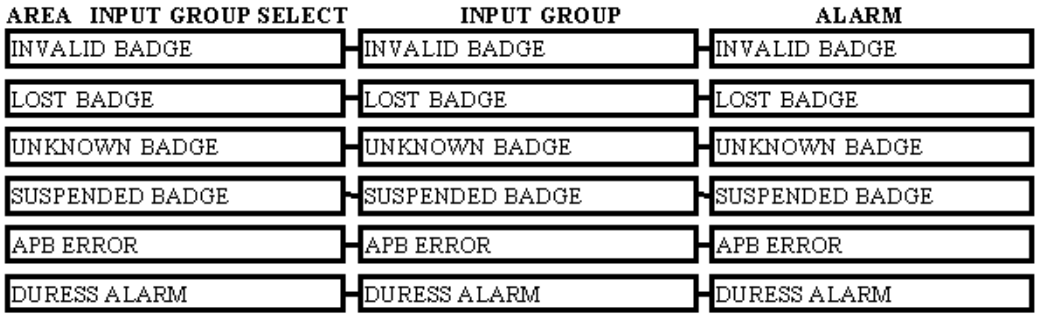


Figure H-10. Alarms Initiated by Areas

Alarms Initiated by Doors

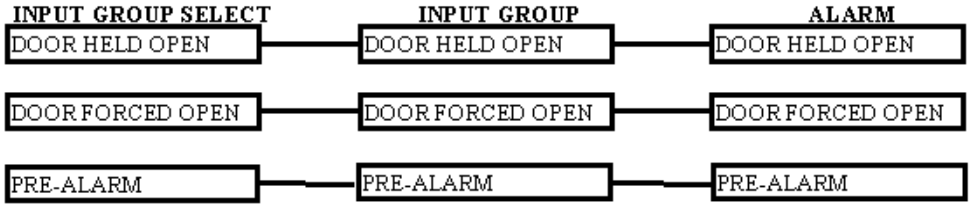


Figure H-11. Alarms Initiated by Doors

Glossary

Access: The ability to enter or pass through, such as to enter a building by going through a door. See Access Control.

Access Control: A security system that controls an individual's ability to enter an area (building, parking lot, room). Typically, readers protect doors or gates. Badges used in the readers permit or deny access based on a person's authorization.

ACK: Acknowledgment. See ACK Packet.

ACK Packet: A message sent between computers to acknowledge that the preceding message was received correctly.

Active Window: The window with the input focus, in which what you type appears. Only one window is active at a time.

AIX: Advanced Interactive Executive; the UNIX-based operating system developed by IBM; used for Picture Perfect.

Alarm Notification Message: An alarm alert message that displays on the Alarm Notification Window on Picture Perfect *X* Terminals when an alarm occurs.

Alarm State: When an alarm sensor detects an alarm condition (such as an open door), its contacts open or close (depending on the type of sensor and how it is wired to the system), and the sensor is said to be in alarm state.

Allowable Open: The length of time a door can remain open before an alarm occurs.

Archive: To copy history transactions from the database to diskette or magnetic tape. Some fields are expanded from IDs to descriptions. Archives are used for later examination of transactions; archives cannot be restored.

Area: A logical grouping of readers and doors; used to control access.

Available Language: A language that can be used by Picture Perfect operators. A language must be supported by Picture Perfect and translated before it can be made available.

BID: The hidden number that uniquely identifies each badge.

Background Window: A window behind another window. The background window does not have the input focus.

Backup: To copy tables from the database to diskette or magnetic tape. A backup can be used to restore the system to a previous state or to recover from a failure.

Badge: A plastic card issued to each person who uses the facility. The system reads the information on the badge to determine whether or not to grant access to a person.

Badge Encode Number: The hidden number that uniquely identifies each badge.

Badge-Issue Permission: Permission to create a new badge record; the toggle button labeled "Badge Issue" on the Permissions form.

Badge-Issue Reader: A reader assigned to a workstation used to issue a badge.

Badge Learn: Occurs when a micro checks with the host on an unknown badge and stores that badge information in its database. The next time the badge is presented to a reader connected to that micro, it will have the needed badge information.

Badge Reader: A device, usually located near a door, used to read badges. When a badge is presented to a badge reader, the system reads it and determines whether or not to unlock the door.

Badge Status: Indicates either the intended use of a badge (such as permanent or temporary) or its current condition (such as active or lost).

Button: A button on a mouse pointing device; a graphical control button on a window frame or in a menu or picklist that works by "clicking" it. See Mouse Button, Function Button, Radio Button, Select Button, Toggle Button.

Category: A "lock" and "key" that controls access. Each area and badge has one or more assigned categories. If a category on a badge matches any of the categories on an area, the badge works as a "key" in readers assigned to that area. A category assigned to an area functions as a lock; a category assigned to a badge functions as a key.

Click: The rapid press-and-release of a mouse button (without moving the mouse) that makes a "click" sound.

Client: An application program for the X Window System. In Picture Perfect, a menu displays when you click the left mouse button in the root window.

Client Area: The area (within the borders of a primary window's frame) that is controlled by an application.

Close: A selection on some menus (or dialog boxes) that closes the window associated with the menu.

CMENU: A diagnostic program that runs on the console in order to monitor and control microcontrollers and X Terminals; can also be used to monitor database activity and configuration in the host or micro.

Code Set: A collection of character codes that express one or more languages. Picture Perfect only supports code sets defined by the International Standards Organization (ISO). Western European languages use the ISO8859-1 code set; Hebrew uses the ISO8859-8 code set.

Control Panel: An area of a window that contains pushbuttons and other graphical controls.

Console: The host computer used for administrative functions (also called host console).

Cursor: A graphical symbol--usually a pipe (|) or block--that indicates your current input location on a screen. A mouse cursor shows where (to what

selection) the mouse is pointing. A text cursor shows where the next character to be typed will appear on the screen.

Daemon: A continually running background process that is not controlled by a terminal. See Process.

Database: Picture Perfect configuration, transaction, and historical data stored on the hard disk of the host computer or the resident memory of a microcontroller. See Distributed Database and Relational Database.

Date Format: The order that the system requires for month, day, and year.

Devices: Physical peripherals such as disks, tapes, printers, networks, and serial port adapters for modems and lines of microcontrollers. Use the Devices menu to configure printers, ports, and communication lines.

Digital Input: A physical sensing device used to monitor an electronic contact connected to a microcontroller. Also called a DI.

Digital Output: A physical control device used to turn on/off an electronic contact connected to a microcontroller. Also called a DO.

Distributed Database: Resident database downloaded to a microcontroller that allows independent decision-making and faster response time.

Door: A database record that links the logical functions of a door with the door strike output, exit button, and door sensor inputs.

Door Forced Open: A logical alarm caused when the door opens without a valid badge read and the door contact reports the door-open state.

Door Open Too Long: A logical alarm caused when a door (unlocked by a valid badge read) remains open longer than the Allowable Open Time (a shunt time that starts when the door contact reports the door-open state).

Double Click: To click a mouse button twice in rapid succession without moving the mouse. See Click.

Downstream: A relative position on a communication line originating at a host computer; for example, the second micro on a line is "downstream" from the first micro. See Micro.

Drag: To press and hold a mouse button while moving the mouse pointer.

Duress Code: A special PIN number used (on a keypad reader) to signal emergency situations. See the Parameters form.

Enabled Reader: A condition in which a reader is enabled to read badges. An enabled reader can be online or offline. See Online Reader and Offline Reader.

Encryption: The encoding of data for security purposes by converting standard data code into a proprietary code.

ENQ: An inquiry message to poll a micro to see if it is responding.

Facility: A facility is a partitioning of the records of the database of the security system.

Facility Profile: A facility profile is a permission set that an operator can access. assigned to a facility.

ENQ: An inquiry message to poll a micro to see if it is responding.

Firewall. A firewall is a set of related programs, located at a network gateway server, that protects the resources of a private network from users from other networks.

Foreground Window: A window in front of another window.

Form: An electronic data-entry worksheet used to enter, find, view, or update data. A form may have input fields, pop-up picklists, and pushbuttons for various functions.

Frame: The border surrounding a window, consisting of a resize border, a window menu button, a title bar, and window control buttons.

Function Button: Icon-based buttons at the top of a form that are used for various functions, such as save, find, delete, view, or quit. See Radio Button, Select Button, Toggle Button.

Function Key: Keys on a computer's keyboard labelled F1 through F12 that may perform unique functions within a system.

Highlight: A graphic technique that provides a visual cue to the current selection or the current location of the input focus. Reverse video is typically used to "highlight" a selection.

Host. A host is generally a device or program that provides services to some smaller or less capable device or program.

Host Console: The host computer terminal used for AIX functions.

I-Beam: A graphic symbol that indicates the location of the mouse pointer in a text entry box. See Text Cursor.

Icon: A graphic symbol that represents a function or an iconified window.

Iconify: To minimize a window. An icon represents the window. See *Restore*.

Inactive Window: A window that does not have the input focus.

Informix: The relational database management system (RDBMS) used by the Picture Perfect system. See Relational Database.

Input: A digital input (DI) or a logical condition detected by the microcontroller. An input is assigned to an input group.

Input Field: An area of the screen where an operator can type in information.

Input Group: A group of one or more digital inputs (or logical inputs) that can cause an alarm (and / or trigger output groups) when any (or all) inputs in the group are detected as true.

Insertion Point: A point (marked by a cursor) where the text that you enter will appear.

Keyboard: The device that the operator uses to interact with the system by typing inputs or responses.

Keypad Override Code: See Shunt.

LAN: A Local Area Network. X Terminals are connected to the host computer using an Ethernet or Token-ring LAN.

Linux. Linux (often pronounced LIH-nuhks with a short "i") is a Unix-like operating system that was designed to provide personal computer users a free or very low-cost operating system comparable to traditional and usually more expensive UNIX systems. Linux has a reputation as a very efficient and fast-performing system. Linux is a remarkably complete operating system, including a graphical user interface, an X Window System, TCP/IP, the Emacs editor, and other components usually found in a comprehensive UNIX system. Linux is publicly open and extendible by contributors. Because it conforms to the Portable Operating System Interface standard user and programming interfaces, developers can write programs that can be ported to other operating systems.

List Box: A scrollable list of options from which to select. Also called a *picklist*. See *Picklist*.

Locale: A language and the location in which it is used. All languages in Picture Perfect are defined in terms of locale. Each language has a unique locale identifier. Picture Perfect uses the locale identifiers defined by AIX. Refer to *Chapter 32 - National Language Support* for a list of locale identifiers.

Location Cursor: A graphic symbol that marks the current location of the keyboard input focus for selection. Typically, this symbol is a box that surrounds the current object. The location cursor is sometimes known as the "selections cursor".

Login: The procedure used by operators to identify themselves to the system. To use the system, an operator must "log in" with a Login Id and Password. The Login Id is associated with a Permissions level that defines the functions an operator can perform. A Password provides secondary validation for that operator.

Logout: A security procedure that protects the system from unauthorized use. When an operator logs out, the system displays the Login screen and requires the next operator to log in.

Maximize: To enlarge a window to full screen size.

Menu: A list of choices, often indicated by a group of icon buttons. The Main Menu lists major functions of the system. A Main Menu option may lead to a submenu or to a form. See Pull-down Menu, Pop-up Menu, Submenu, and Form.

Message: Transaction information that the system displays. See also Alarm Message.

Micro: See Microcontroller.

Microcontroller (micro): The metal box containing the circuitry that controls the opening and closing of doors. Badge readers, alarm points, and digital output points are wired to micros, and micros are connected to the host computer. The

Micro/4-P or Micro/5-P is the first microcontroller on a communication line from the host. Micro/2s are configured in Picture Perfect as if they were physically part of the closest upstream Micro/4-P. See Upstream and Downstream.

Mode: A set of schedules that defines how the system operates and specifies the characteristics of readers, areas, doors, and other system components. See Operating Mode.

Modem: Hardware device used to communicate between computer systems over telephone or other communications lines.

Monitoring: See Door Forced Open and Shunt.

Mouse Button: One of two or three buttons on a pointing device, usually referred to as "left mouse button", "middle mouse button", and "right mouse button". See Click, Drag, Double-Click, for ways to use a mouse button.

Offline: A condition in which the micro is not communicating with the host computer.

Offline Reader: A condition in which a reader is not enabled to release the doorstrike when a valid badge read occurs. Access attempts at an offline reader can be routed to the Activity Monitor and to printers and online history.

Online: A micro is communicating with the host.

Online Reader: A reader is enabled to release the doorstrike when a valid badge read occurs. Access attempts at an online reader can be routed to the Activity Monitor, printers and online history.

Open: To display a window.

Open Too Long: See Door Open Too Long.

Operating Mode: The mode associated with a set of schedules that defines system operating specifications.

Option: A selection on a menu.

Output: A physical digital output (DO) that actuates devices such as a siren, a doorstrike, or lights, which can be triggered by an output group.

Output Group: A group of one or more outputs that can be triggered when activated by an associated input group.

Packet: See ACK Packet.

Password: A special code, used during login, that determines if an operator is authorized to log into the system.

Permissions: A level of operator permission to perform system functions. Each group of operators functions is a "permission group" that can be assigned to an operator authorized to perform those functions. See Login and Password.

Picklist: A window that displays a scrolling list of options for a certain category. You may be able to select several or only one of the options on the list, depending on the feature in use.

PIN #: A Personal Identification Number that identifies a person. If a facility uses both a keypad and badge reader, employees present their badge to the reader, then enter their PIN on the reader keypad.

Pointer: A graphic symbol in a window that indicates the current position of the mouse and the activity state of the window: ready or busy.

Pop-up Menu: A menu that "pops up" when you click a button.

Port Group: A single line of microcontrollers connected to a port.

Port Group Leader: The first microcontroller in the port group. See Port Group.

Primary Language: Language used by Picture Perfect for alarm notification, archive notification, describing alarms in the Alarm Monitor, and describing badge, input, and status activity in the Activity Monitor. These are always described in the primary language, even when viewed by operators working in a different language.

Priority: A number used to indicate the response priority of an alarm. The lower the priority number, the more serious the alarm.

Process: One of many independent programs running at the same time in the computer.

Protected Field: An area of a screen where an operator cannot type in or change information.

Provided Language: A language whose translations are provided by CASI-RUSCO. All provided languages are available at installation. English and French are the only provided languages.

Radio Button: A diamond-shaped button that allows only a single choice from a list of choices. See Toggle Button.

Readers: Badge readers are devices connected to the system that read the encoded badge numbers. They are usually located near doors or gates, or in elevators that the system controls.

Relational Database: A database that uses a table structure to store data. Relationships among tables are logically specified at the time of user access into the database; they are not built into the data structures themselves.

Response: Text that the operator selects or types when answering an alarm.

Restore: To re-display an iconified window.

Root Window: The background behind all Picture Perfect windows; sometimes called the "desktop" or "workspace" area, where all the windows in your environment display. To display the Control menu, click the left mouse button on the root window; drag to highlight a selection. To display the Client menu, click the right mouse button on the root window; drag to highlight a selection.

SSL. SSL (Secure Sockets Layer) is a commonly-used protocol for managing the security of a message transmission on the Internet. SSL uses a program layer located between the Internet's Hypertext Transfer Protocol (HTTP) and Transport Control Protocol (TCP) layers.

Schedule Event: A time-dependent change to a mode, area, reader, door, alarm, input group, or output group. See Operating Mode.

Screen: The video-display portion of a computer terminal or workstation.

Scroll Bar: A graphical device used to move the contents of a window up, down, left, or right inside the frame. A scroll bar consists of a slider, scroll arrows, and a scroll area. To scroll, click on the scroll arrows or the scroll area or drag the slider.

Select: To choose an object to be acted upon or an action to be performed.

Select Button: The mouse button used to make a selection. In Picture Perfect, this is the left button.

Semaphore. In programming, especially in UNIX-based systems, semaphores are a technique for coordinating or synchronizing activities in which multiple process compete for the same operating system resources. A semaphore is a value in a designated place in operating system (or kernel) storage that each process can check and then change

Server. Generally, a server is a computer program that provides services to other computer programs in the same or other computers. In the client/server programming model, a server is a program that awaits and fulfills requests from client programs in the same or other computers.

Shuffle: To move a window to the screen foreground or background.

Shunt: Override an alarm on a door contact that detects an open state on the door.

A digital input device monitors the door state. If the door opens with a valid read (or exit device), the input device (a door contact) detects a state change but does not report the change until a shunt time elapses. The shunt time allows the badgeholder enough time to get through the door. See Door Forced Open and Door Open Too Long.

To override a door sensor for a longer time, enter a keypad override code (a microcontroller-dependent code set on the Micros screen).

Shutdown: To stop running the application and the operating system.

Status: The current condition of something, such as a badge or a micro. The ***Status*** form is used for viewing a micro's current database to verify configuration and scheduling.

Submenu: A series of icon buttons that appear when you click one of the Main Menu buttons. A submenu contains options for selection.

Supported Language: A language that can be used in Picture Perfect. All languages other than English and French must be translated and made available before they can be used.

SYN: A message from the host that synchronizes the micro's clock.

System Administrator: A full-function operator; an operator permission without any function restrictions.

Text Box: An area of the screen used for text entry. A text cursor appears in the box.

Text Orientation: The direction in which a language is read, either left or right. Latin-based languages are read left-to-right, so their Text Orientation is left. Hebrew is read right-to-left, so its Text Orientation is right.

Toggle Button: A square button that appears with each item on a list where you can make multiple selections.

TPS: Transaction Processing System; the program that communicates with microcontrollers.

Transaction: Microcontroller activity.

TTY. In Unix-based operating systems, any terminal at all; sometimes used to refer to the particular terminal controlling a given job. Also the name of a Unix command which outputs the name of the current controlling terminal.

Unlock Time: The length of time a door latch is to remain unlocked after a valid badge read (or after an exit button activates). This time allows the badgeholder to open and pass through the door.

Upstream: A relative position on a communication line originating at a host computer. For example, the second micro on a line is "upstream" from the third micro, because the second micro is relatively closer to the host.

Window: A framed display that contains all or part of a menu, submenu, form, picklist, monitor, or message. See Background Window.

Window Frame: See Frame.

Window Manager: A program that controls the size, placement, and operation of windows on the workspace. The window manager includes the functional window frames that surround each window object, and may include a separate menu for the workspace.

Window Menu: The menu that displays when the window menu button is clicked. The window menu typically contains selections for restoring, moving, sizing, minimizing, maximizing, and closing the window.

Workstation: An X Terminal that displays the forms that the operator uses to interact with the system; connected to the host computer using an Ethernet or Token-ring LAN (Local Area Network). See LAN.

xdm: The login utility used to allow an operator to log in on an X Terminal. The operator uses an xdm window to enter a Login ID and a Password. The X Window Display Manager (xdm) is the program that controls workstation windows.

X Terminal: The computer monitor that displays the screens that the operator uses to interact with the system. Also called a workstation.

X Window System: A portable network-transparent window system that handles graphics and multiple fonts in a hierarchy of windows on a wide variety of bit-mapped display devices.

NOTES

Index

A

Access 17.1
Access / Secure Operations 17.2
Activity Monitor 28.1
Activity Monitor Window 28.4
Activity Monitoring 2.3
AIX 2.2
Alarm Alert Window 27.3
Alarm Color 4.33, 8.12
Alarm Events 16.33
Alarm Events Form 16.34
Alarm Graphics 2.4
Alarm History Size 4.29
Alarm Instructions 8.2
Alarm Messages 2.3
Alarm Monitor 27.2
Alarm Monitor Window 27.2
Alarm Response Window 27.3
Alarm Responses 8.4
Alarm / Activity Monitor 8.1
Alarm / Activity Monitor Routing 7.1
Alarms 2.3
Alarms Form 8.6
Antipassback 2.4
Anti-Passback Status 14.23
Archive 18.2
Archive Backup Window 18.5
Area Events 16.14
Area Events Form 16.16
Areas 13.13
Areas Form 13.15
Auto-Generate 14.3

B

Backup Events Form 18.9
Badge Activity Message 28.4
Badge Categories 14.25
Badge Encode Format Window 14.16
Badge Formats 4.24
Badge Formats Form 4.26
Badge History Size 4.29
Badge Holder Customization 31.1
Badge Limited Usage 14.18
Badge Monitor 28.2
Badge Removal 14.9
Badge Removal Popup 14.8
Badge Report 20.10
Badge Table Values 20.21
Badges Form 14.11
Break Variables 20.19
Bump to Email 7.7

C

Card Trace 25.1
Card Trace Routing 4.29
Categories 13.6
Categories Form 13.7
Category Assignment 13.8
Category Floors Form 22.21
Category Manager 13.8
Change Field 31.8
Changing a Badge 14.5
Check Current Diagnostic Levels 33.13
Clear Diagnostic Levels Menu 33.17
Client Menu 3.20
CMENU 33.1
CMENU Utility 33.2
Color, Alarm 8.12
Colors, Alarm 4.33
COM Port Device Names for Linux 4.13
Communications 10.3
Control Menu 3.19
Control Outputs Form 29.2, 29.4
Controlling an Individual Output 29.4
Controlling an Output 29.2
Customization 14.12
Customizing Badge and Department Screens 32.16

D

Database Protection 2.3
Database Synonyms 32.8
Date Format 4.30
Delete 3.10
Delete Report Picklist 19.5, 20.6
Deleting a Badge 14.6
DES 10.27
Diagnostics Subsystem 33.2
Diagnostics Subsystem Menu 33.3
Dial-Up Window 10.22
Digital Outputs 2.4
Disabling Keypad Alarm Response 23.7
Disabling Pre-Alarm 24.1
Door Events 16.30
Door Events Form 16.31
Doors 13.30
Doors Form 13.35
Doors Form Configured for Elevator Door 22.22
Double-Badge Reporting 26.2
Download Upon Save 14.17
Dump PC Main Utilities Menu 33.4
Duration Time for Elevator Access 22.6
Duress Code 4.32

E

eFlash 11.8
Elevator Access 22.6
Elevator Control Configuration 22.7
Embedded Variables 20.18
Emergency Modes 16.3
Encryption 10.28
Error and Warning Messages 32.16
Events 16.2
Execution Menu 19.13

F

Facilities 15.5
Facility 4.38, 6.3, 6.5, 6.12, 7.4, 7.6, 8.3, 8.5, 8.9, 9.3, 9.7, 12.7, 12.14, 13.15, 13.23,

13.40, 14.16, 16.6, 16.7, 16.10, 16.17, 16.27, 16.32, 16.35, 16.39, 16.43, 18.9, 19.18, 20.25, 22.20
Facility Profile 6.1, 6.8
Find 3.9
FIREWALL 4.17
firewall 10.3
Flags Column Values 20.21
Flash Download Utility 11.3
FlashTool 11.6
Font Menu 19.13
Force Download
See Download Upon Save 14.17
Format Columns Window 19.8
Format Menu 19.6
Format Page Window 19.9
Format Summary Window 19.11
Forms 3.6
Alarm Events 16.34
Alarms 8.6
Area Events 16.16
Areas 13.14
Backup Events 18.9
Badge Formats 4.26
Badges 14.11
Badges, Card Trace Setup 25.2
Badges, Customization 31.1
Badges, Keypad Alarm Response 23.7
Badges, User Fields 31.2
Categories 13.7
Category Floors 22.21
Control Outputs 29.2, 29.4
Departments 4.37
Departments, User Fields 31.3
Door Events 16.31
Doors 13.35
Doors, Elevator Setup 22.22
Doors, Keypad Alarm Response 23.6
Doors, Pre-Alarm Setup 24.3, 24.4
Generator 15.4
History 19.2
Input Groups 9.5
Input Groups Events 16.38
Inputs 12.10
Messages 8.3
Micros 10.18
Micros, Alarm Response Setup 23.5
Micros, Elevator Setup 22.8
Mode Command 16.7
Mode Creation 16.6
Mode Events 16.10
Modems 4.6, 4.8
Operators 6.9
Output Groups 9.2
Output Groups Events 16.42
Outputs, Elevator Setup 22.10
Parameters 4.28
Parameters, Badge-Trace Routing 25.1
Parameters, Elevator Floors 22.8
Permission Group 6.3
Permissions 6.5
Personnel Type 4.39
Ports 4.12
Ports, Network 4.16
Printers 4.18, 4.20
Readers 13.22
Readers, Badge and Keypad Setup 23.5
Readers, Double-Badge Setup 26.3
Report Events 19.17, 20.25
Responses 8.4
Route Definitions 7.3
Route Points 7.5
Routings 4.21
Status 30.2
Structured Query Language (SQL) 20.2
Temporary Categories 14.21
Terminals 4.2
Free Access Floors 22.6
Freeze 3.14
Function Buttons 3.9

G

Generating Records 15.7
Generator Form 15.4
Glossary GL.1
Guard 2.5

H

Help 2.3
History Form 19.2
Holiday Mode 16.4
Home Icon Button 19.13
Host Records 33.12

I

Import/Export 2.4
Increased Category 4.36, 13.2, 13.20, 14.25, 15.6, 16.18
InGroups Events 16.37
InGroups Events Form 16.38
Input Groups 9.3
Input Groups Form 9.5
Inputs 12.9
Inputs Form 12.10

K

Keypad Response 23.2
Keys Form 10.28

L

Language 32.14, 32.15
Language Selection 31.5
Language Translation 32.5
Limited Usage 13.29, 14.18
Linux 2.1, GL.5
Locale 32.6
Log In 3.1
Log Out 3.3
Logical Operators 20.16

M

Main Menu 3.3, 3.4
Master Records 15.2
Master Records Window 15.3
Menu 3.3, 3.4

Messages Form 8.3
Micro Alarms 10.10
Micro Communications 10.3
Micro Map 33.8
Micro Status 33.9
Micro Utilities 33.17
Micro Utilities Menu 33.17
Micros Form 10.18
MicTool 11.6
Mode Command Form 16.7
Mode Creation Form 16.6
Mode Events Form 16.10
Modems 4.4
Modes 16.2
Monitor Control Picklist 28.4
Multiple Access Violations 23.4

N

Networking option 2.5
New 3.13
Normal Mode 16.2

O

Open Report Picklist 19.3, 20.4
Operating System 2.2
Operator Activity Message 28.5
Operator History Size 4.29
Operator Interface 2.2
Operator Monitor 28.5
Operator Response 23.3
Operators 6.9
Operators Form 6.9
OutGroups Events 16.41
OutGroups Events Form 16.42
Output Group Picklist 12.8
Output Groups 9.1
Output Groups Form 9.2
Outputs 12.2
Outputs Form 12.3

P

Page Setup Window 20.6
Parent Input Group 9.7
Password 3.2, 6.11
Permission Group Form 6.3
Permission Groups 6.1
Permissions 6.4
Permissions Form 6.5
Photo-Imaging option 2.4
Picklists 3.7
PIN Entry 2.4, 14.13
Port Records 33.12
Ports 4.10
Ports Form 4.12
Pre-Alarm Fields 24.3
Pre-loaded Report 20.9
Print Options Window 19.4
Print Report Window 20.7
Printer Utilities 33.21
Printer Utilities Menu 33.21
Printers 4.18
Printers Form 4.18
Printing a History Report 19.16
Process Control Diagnostics 33.3
Protection Plan 2.5

Q

Query 2.3
Quit 3.9

R

Radio Buttons 3.7
Reader Events 16.25
Readers 13.21
Readers Form 13.22
Real-Time Monitoring 2.3
Recovering the Entire System 18.13
Red Hat Linux 7.2 Operating System 2.5
Redundant-System option 2.4
Related Documentation 1.1
Relational Operators 20.17
Remove Record Popup 14.8
Removing A Single Alarm 27.6
Removing Badge Records 14.7
Report Events Form 19.17, 20.25
Report Menu 19.2
Reports 2.4
Reports Menu 20.4
Responding to An Alarm 27.3
Responses Form 8.4
Responses Picklist 27.4
Restore Window 18.11
Restoring the Database 18.10
Resume 3.14
Route Definitions 7.3
Route Definitions Form 7.3
Route Points 7.4
Route Points Form 7.5
Route to Email 7.6
Routing, Card Trace 4.29
Routings Form 4.21
Runtime Events 16.11

S

Save 3.9
Save Report As Window 19.4
Save Report Query As Window 20.5
Saving a History Report 19.16
Schedules 2.3
Scheduling a History Report 19.16
Scheduling an SQL Report 20.23
Scheduling Backups 18.8
Scheduling Elevator Free Access 22.21
Scroll Bars 3.17
Secure 17.1
Selection Buttons 3.7
Set Diagnostic Levels Menu 33.14
Setup Procedures 3.26
Shutting Down 3.24
Source Menu 19.5
SQL Clauses 20.14
SQL Form 20.2
SQL Names Picklist 20.8
SQL Syntax 20.18

SQL Syntax Menu 20.8
SQL Variables 20.18
Start/End Events 16.12
Starting Picture Perfect 3.21
Status By Area 30.3
Status by Micro 30.2
Status Form 30.2
Status Information from Micros 33.18
Stopping Picture Perfect 3.21
Structured Query Language 20.1
Submenu 3.3, 3.4
Support Services 2.5
Swipe and Show 19.1, 28.1, 28.2, 28.7, 28.8
Swipe and Show Activity Message 28.7
Swipe and Show Control 13.26, 16.29
Swipe and Show Monitor 28.6
System Configuration Standards 22.7
System Startup 3.1

T
Table Backup Window 18.6
Table Selection 31.6
Temporary Categories Form 14.21
Terminal Records 33.12
Terminals 4.2
Terminals Form 4.2
Text Boxes 3.6
Time Format 4.31
Title Bar 3.15
Toggle Buttons 3.7
Trace, Card or Badge 25.1
Tracing a Badge or Card 4.29, 14.17, 25.1
Transaction History Processing 2.4
Translating Text 32.8
Translations 32.12, 32.14
Troubleshooting Guide 33.22
Type Menu 19.5

U
UnixWare 2.2
Up/Down Buttons 19.13
Usage Count 13.29, 14.18
User Customization Window 31.4
User Fields in Departments Form 31.3
User Fields Window 31.2
Using a Mouse 3.14
Using a Window 3.15
Utilities Menu 33.2

V
Variables Picklist 19.12
vi Editor E.1
View 3.11
Viewing a History Report 19.14
Viewing Status By Area 30.3
Violation Notification 23.2

W
WatchLog 33.17
Window Frame 3.16
Window Menu 3.18

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